

Result No.	Query			Description	
	Score	Match	Length	ID	
1	842	100.0	157	15	US-10-609-370-2
2	689.5	81.9	696	9	US-09-817-647-23
3	689.5	81.9	696	9	US-09-877-665-23
4	689.5	81.9	696	13	US-10-136-573A-23
5	689.5	81.9	696	14	US-10-215-862-23
6	689.5	81.9	696	17	US-10-944-116-23
7	689.5	81.9	696	20	US-10-944-116-23
8	689.5	81.9	720	9	US-09-817-647-6
9	689.5	81.9	720	9	US-09-877-665-6
10	689.5	81.9	720	13	US-10-136-573A-6
11	689.5	81.9	720	14	US-10-215-862-6

Qy 121 FCAAFYKSRNITANSVSRWKGLPSQPNLQODK 157  
Db 121 FCAAFYKSRNITANSVSRWKGLPSQPNLQODK 157

RESULT 2

US-09-817-647-23  
; Sequence 23, Application US/09817647  
; Patent No. US2002082229A1  
; GENERAL INFORMATION:  
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao  
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related  
; Ligands and Uses Therefor

NUMBER OF SEQUENCES: 23  
CORRESPONDENCE ADDRESS:  
ADDRESSEE: Genentech, Inc.  
STREET: 1 DNA Way  
CITY: South San Francisco  
STATE: California  
COUNTRY: USA  
ZIP: 94080

COMPUTER READABLE FORM:  
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk  
COMPUTER: IBM PC compatible  
OPERATING SYSTEM: PC-DOS/MS-DOS  
SOFTWARE: WinPatIn (Genentech)  
CURRENT APPLICATION DATA:  
APPLICATION NUMBER: US/09/817,647  
FILING DATE: 26-Mar-2001  
CLASSIFICATION: <Unknown>

PRIOR APPLICATION DATA:  
APPLICATION NUMBER: 09/107,979  
FILING DATE: <Unknown>  
ATTORNEY/AGENT INFORMATION:  
NAME: Conley, Deirdre L.  
REGISTRATION NUMBER: 36,487  
REFERENCE/DOCKET NUMBER: P1084R1-2

TELECOMMUNICATION INFORMATION:  
TELEPHONE: 650/952-9881  
TELEFAX: 650/952-2066  
INFORMATION FOR SEQ ID NO: 23:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 696 amino acids  
TYPE: Amino Acid  
TOPOLOGY: Linear

FEATURE:  
NAME/KEY: Human NRG3B2  
LOCATION: 1-696  
IDENTIFICATION METHOD:  
OTHER INFORMATION:  
SEQUENCE DESCRIPTION: SEQ ID NO: 23:  
US-09-817-647-23

Query Match 81.9%; Score 689.5; DB 9; Length 696;  
Best Local Similarity 92.3%; Pred. No. 2.1e-63;  
Matches 131; Conservative 4; Mismatches 4; Indels 3; Gaps 2;

Qy 1 SSSSATTTPETSTSPKFTTSTYSTERSEHFKPCRDKDLAYCLNDGECFVIETLTGSHK 60  
Db 256 SSSSATTTPETSTSPKFTTSTYSTERSEHFKPCRDKDLAYCLNDGECFVIETLTGSHK 315

Qy 61 HCRCKEGYQGVRCDDQLPKTDSILSDP-NHLGIEFMESEVYQROVLISCIIFGIVIG 119  
Db 316 HCRCKEGYQGVRCDDQLPKTDSILSDP-TDHLGIEFMESEVYQROVLISCIIFGIVIG 375

Qy 120 MFCAAFYKSRNITANSVSEE 141  
Db 376 MFCAAFYKSKQ--AKQIQEQ 395

RESULT 3

US-09-877-665-23  
; Sequence 23, Application US/09877665

; Patent No. US20020164680A1  
; GENERAL INFORMATION:  
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao  
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related  
; Ligands and Uses Therefor

NUMBER OF SEQUENCES: 23  
CORRESPONDENCE ADDRESS:  
ADDRESSEE: Genentech, Inc.  
STREET: 1 DNA Way  
CITY: South San Francisco  
STATE: California  
COUNTRY: USA  
ZIP: 94080

COMPUTER READABLE FORM:  
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk  
COMPUTER: IBM PC compatible  
OPERATING SYSTEM: PC-DOS/MS-DOS  
SOFTWARE: WinPatIn (Genentech)  
CURRENT APPLICATION DATA:  
APPLICATION NUMBER: US/09/877,665  
FILING DATE: 08-Jun-2001  
CLASSIFICATION: <Unknown>

PRIOR APPLICATION DATA:  
APPLICATION NUMBER: US/09/109,206  
FILING DATE: 30-Jun-1998  
ATTORNEY/AGENT INFORMATION:  
NAME: Conley, Deirdre L.  
REGISTRATION NUMBER: 36,487  
REFERENCE/DOCKET NUMBER: P1084R1-1

TELECOMMUNICATION INFORMATION:  
TELEPHONE: 650/225-2066  
TELEFAX: 650/952-9881  
INFORMATION FOR SEQ ID NO: 23:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 696 amino acids  
TYPE: Amino Acid  
TOPOLOGY: Linear

FEATURE:  
NAME/KEY: Human NRG3B2  
LOCATION: 1-696  
IDENTIFICATION METHOD:  
OTHER INFORMATION:  
SEQUENCE DESCRIPTION: SEQ ID NO: 23:  
US-09-877-665-23

Query Match 81.9%; Score 689.5; DB 9; Length 696;  
Best Local Similarity 92.3%; Pred. No. 2.1e-63;  
Matches 131; Conservative 4; Mismatches 4; Indels 3; Gaps 2;

Qy 1 SSSSATTTPETSTSPKFTTSTYSTERSEHFKPCRDKDLAYCLNDGECFVIETLTGSHK 60  
Db 256 SSSSATTTPETSTSPKFTTSTYSTERSEHFKPCRDKDLAYCLNDGECFVIETLTGSHK 315

Qy 61 HCRCKEGYQGVRCDDQLPKTDSILSDP-NHLGIEFMESEVYQROVLISCIIFGIVIG 119  
Db 316 HCRCKEGYQGVRCDDQLPKTDSILSDP-TDHLGIEFMESEVYQROVLISCIIFGIVIG 375

Qy 120 MFCAAFYKSRNITANSVSEE 141  
Db 376 MFCAAFYKSKQ--AKQIQEQ 395

RESULT 4

US-10-136-573A-23  
; Sequence 23, Application US/10136573A  
; Publication No. US20020161200A1  
; GENERAL INFORMATION:  
; APPLICANT: Godowski, Paul J.  
; APPLICANT: Mark, Melanie Rose  
; APPLICANT: Zhang, Dong Xiao  
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related Ligands and  
; Uses Therefor  
; FILE REFERENCE: P1084R1C2

;; CURRENT APPLICATION NUMBER: US/10/136,573A  
;; CURRENT FILING DATE: 2002-04-29  
;; PRIOR APPLICATION NUMBER: US 09/480,977  
;; PRIOR FILING DATE: 2000-01-11  
;; PRIOR APPLICATION NUMBER: US 08/899,437  
;; PRIOR FILING DATE: 1997-07-24  
;; PRIOR APPLICATION NUMBER: US 60/052,019  
;; PRIOR FILING DATE: 1997-07-09  
;; NUMBER OF SEQ ID NOS: 23  
;; SEQ ID NO 23  
;; LENGTH: 696  
;; TYPE: PRT  
;; ORGANISM: Homo sapiens  
US-10-136-573A-23

Query Match 81.9%; Score 689.5; DB 13; Length 696;  
Best Local Similarity 92.3%; Pred. No. 2.1e-63;  
Matches 131; Conservative 4; Mismatches 4; Indels 3; Gaps 2;  
  
Qy 1 SSSSSATTTTPTSTSPKFTTSTYSTERSEHFPCRDKDLAYCLNDGECFVIETLTGSHK 60  
Db 256 SSSSSATTTTPTSTSPKFTTSTYSTERSEHFPCRDKDLAYCLNDGECFVIETLTGSHK 315  
  
Qy 61 HCRKEGVQVRCDOQFLPKTDSILSDP-NHLGIFMESEEVYQROVLSISCIIFGIIVG 119  
Db 316 HCRKEGVQVRCDOQFLPKTDSILSDP-NHLGIFMESEEVYQROVLSISCIIFGIIVG 375  
  
Qy 120 MFCAAFYFKSKRNITANSVSEE 141  
Db 376 MFCAAFYFKSKKQ--AKQIQEQ 395

RESULT 5  
US-10-215-862-23  
;; Sequence 23, Application US/10215862  
;; Publication No. US20030036166A1  
;; GENERAL INFORMATION:  
;; APPLICANT: Godowski, Paul J.  
;; APPLICANT: Mark, Melanie Rose  
;; APPLICANT: Zhang, Dong Xiao  
;; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related Ligands and  
;; TITLE OF INVENTION: Uses Therefor  
;; FILE REFERENCE: P1084R1D2C1  
;; CURRENT APPLICATION NUMBER: US/10/215,862  
;; CURRENT FILING DATE: 2002-09-24  
;; PRIOR APPLICATION NUMBER: US 09/126,663  
;; PRIOR FILING DATE: 1998-07-30  
;; PRIOR APPLICATION NUMBER: US 08/899,437  
;; PRIOR FILING DATE: 1997-07-24  
;; PRIOR APPLICATION NUMBER: US 60/052,019  
;; PRIOR FILING DATE: 1997-07-09  
;; NUMBER OF SEQ ID NOS: 23  
;; SEQ ID NO 23  
;; LENGTH: 696  
;; TYPE: PRT  
;; ORGANISM: Homo sapiens  
US-10-215-862-23

Query Match 81.9%; Score 689.5; DB 14; Length 696;  
Best Local Similarity 92.3%; Pred. No. 2.1e-63;  
Matches 131; Conservative 4; Mismatches 4; Indels 3; Gaps 2;  
  
Qy 1 SSSSSATTTTPTSTSPKFTTSTYSTERSEHFPCRDKDLAYCLNDGECFVIETLTGSHK 60  
Db 256 SSSSSATTTTPTSTSPKFTTSTYSTERSEHFPCRDKDLAYCLNDGECFVIETLTGSHK 315  
  
Qy 61 HCRKEGVQVRCDOQFLPKTDSILSDP-NHLGIFMESEEVYQROVLSISCIIFGIIVG 119  
Db 316 HCRKEGVQVRCDOQFLPKTDSILSDP-NHLGIFMESEEVYQROVLSISCIIFGIIVG 375  
  
Qy 120 MFCAAFYFKSKRNITANSVSEE 141  
Db 376 MFCAAFYFKSKKQ--AKQIQEQ 395

RESULT 6  
US-10-944-116-23  
;; Sequence 23, Application US/10944116  
;; Publication No. US20050048622A1  
;; GENERAL INFORMATION:  
;; APPLICANT: Godowski, Paul J.  
;; APPLICANT: Mark, Melanie Rose  
;; APPLICANT: Zhang, Dong Xiao  
;; TITLE OF INVENTION: ErbB4 Receptor-Specific Neuregulin Related  
;; TITLE OF INVENTION: Ligands and Uses Therefor  
;; NUMBER OF SEQUENCES: 23  
;; CORRESPONDENCE ADDRESS:  
;; ADDRESSEE: Genentech, Inc.  
;; STREET: 1 DNA Way  
;; CITY: South San Francisco  
;; STATE: California  
;; COUNTRY: USA  
;; ZIP: 94080  
;; COMPUTER READABLE FORM:  
;; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk  
;; OPERATING SYSTEM: PC-DOS/MS-DOS  
;; SOFTWARE: WinPatIn (Genentech)  
;; CURRENT APPLICATION DATA:  
;; APPLICATION NUMBER: US/10/944,116  
;; FILING DATE: 17-Sep-2004  
;; CLASSIFICATION: <Unknown>  
;; PRIOR APPLICATION DATA:  
;; APPLICATION NUMBER: 09/877665  
;; FILING DATE: 08-JUN-2001  
;; APPLICATION NUMBER: 09/109206  
;; FILING DATE: 30-JUN-1998  
;; APPLICATION NUMBER: 60/052019  
;; FILING DATE: 09-JUL-1997  
;; ATTORNEY/AGENT INFORMATION:  
;; NAME: Conley, Deirdre L.  
;; REGISTRATION NUMBER: 36,487  
;; REFERENCE/DOCKET NUMBER: P1084R1-1C2  
;; TELECOMMUNICATION INFORMATION:  
;; TELEPHONE: 650/225-2066  
;; TELEFAX: 650/952-9881  
;; INFORMATION FOR SEQ ID NO: 23:  
;; SEQUENCE CHARACTERISTICS:  
;; LENGTH: 696 amino acids  
;; TYPE: Amino Acid  
;; TOPOLOGY: Linear  
;; FEATURE:  
;; NAME/KEY: Human NRG3B2  
;; LOCATION: 1-696  
;; IDENTIFICATION METHOD:  
;; OTHER INFORMATION:  
;; SEQUENCE DESCRIPTION: SEQ ID NO: 23:  
US-10-944-116-23

Query Match 81.9%; Score 689.5; DB 17; Length 696;  
Best Local Similarity 92.3%; Pred. No. 2.1e-63;  
Matches 131; Conservative 4; Mismatches 4; Indels 3; Gaps 2;  
  
Qy 1 SSSSSATTTTPTSTSPKFTTSTYSTERSEHFPCRDKDLAYCLNDGECFVIETLTGSHK 60  
Db 256 SSSSSATTTTPTSTSPKFTTSTYSTERSEHFPCRDKDLAYCLNDGECFVIETLTGSHK 315  
  
Qy 61 HCRKEGVQVRCDOQFLPKTDSILSDP-NHLGIFMESEEVYQROVLSISCIIFGIIVG 119  
Db 316 HCRKEGVQVRCDOQFLPKTDSILSDP-NHLGIFMESEEVYQROVLSISCIIFGIIVG 375  
  
Qy 120 MFCAAFYFKSKRNITANSVSEE 141  
Db 376 MFCAAFYFKSKKQ--AKQIQEQ 395

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RESULT 7
US-11-035-787-23
; Sequence 23, Application US/11035787
; Publication No. US20050136467A1
; GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
; Ligands and Uses Therefor
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: WinPatIn (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/11/035,787
; FILING DATE: 14-Jan-2005
; CLASSIFICATION: <Unknown>
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 09/480,977
; FILING DATE: 11-Jan-2000
; APPLICATION NUMBER: 08/899,437
; FILING DATE: 24-Jul-1997
; ATTORNEY/AGENT INFORMATION:
; NAME: Conley, Deirdre L.
; REGISTRATION NUMBER: 36,487
; REFERENCE/DOCKET NUMBER: PI084R1C3
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650/225-2066
; TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 23:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 696 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
; FEATURE:
; NAME/KEY: Human NRG3B2
; LOCATION: 1-696
; IDENTIFICATION METHOD:
; OTHER INFORMATION:
; SEQUENCE DESCRIPTION: SEQ ID NO: 23:
US-11-035-787-23

Query Match      81.9%; Score 689.5; DB 20; Length 696;
Best Local Similarity 92.3%; Pred. No. 2.le-63;
Matches 131; Conservative 4; Mismatches 4; Indels 3; Gaps 2;

QY 1 SSSSSATTTTPTSTSPKFTHTTSTERSHFKPCRDKDLAYCLNDGECFVIETLTGSHK 60
Db 256 SSSSSATTTTPTSTSPKFTHTTSTERSHFKPCRDKDLAYCLNDGECFVIETLTGSHK 315

QY 61 HCKCKEGYQGVRCDFLPKTDLSILSDP-NHLGIEFMESEVYQVLSISCIIFGIVIG 119
Db 316 HCKCKEGYQGVRCDFLPKTDLSILSDP-TDHLGIEFMESEVYQVLSISCIIFGIVIG 375

QY 120 MFCAAFYFKSKRNITANSVSEE 141
Db 376 MFCAAFYFKSKQ--AKQIQEQ 395

RESULT 8
US-09-817-647-6
; Sequence 6, Application US/09817647
; Patent No. US20020082229A1
; GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
; Ligands and Uses Therefor
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
; ZIP: 94080
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: WinPatIn (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: 09/107,979
; FILING DATE: <Unknown>
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 09/107,979
; FILING DATE: 26-Mar-2001
; CLASSIFICATION: <Unknown>
; ATTORNEY/AGENT INFORMATION:
; NAME: Conley, Deirdre L.
; REGISTRATION NUMBER: 36,487
; REFERENCE/DOCKET NUMBER: PI084R1-2
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650/225-2066
; TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 6:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 720 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
; FEATURE:
; NAME/KEY: hNRG3B1 amino acid sequence
; LOCATION: 1-720
; IDENTIFICATION METHOD:
; OTHER INFORMATION:
; SEQUENCE DESCRIPTION: SEQ ID NO: 6:
US-09-817-647-6

Query Match      81.9%; Score 689.5; DB 9; Length 720;
Best Local Similarity 92.3%; Pred. No. 2.2e-63;
Matches 131; Conservative 4; Mismatches 4; Indels 3; Gaps 2;

QY 1 SSSSSATTTTPTSTSPKFTHTTSTERSHFKPCRDKDLAYCLNDGECFVIETLTGSHK 60
Db 256 SSSSSATTTTPTSTSPKFTHTTSTERSHFKPCRDKDLAYCLNDGECFVIETLTGSHK 315

QY 61 HCKCKEGYQGVRCDFLPKTDLSILSDP-NHLGIEFMESEVYQVLSISCIIFGIVIG 119
Db 316 HCKCKEGYQGVRCDFLPKTDLSILSDP-TDHLGIEFMESEVYQVLSISCIIFGIVIG 375

QY 120 MFCAAFYFKSKRNITANSVSEE 141
Db 376 MFCAAFYFKSKQ--AKQIQEQ 395

RESULT 9
US-09-877-665-6
; Sequence 6, Application US/09877665
; Patent No. US20020164680A1
; GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
; Ligands and Uses Therefor
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
```



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, STREET: 1 DNA Way
, CITY: South San Francisco
, STATE: California
, COUNTRY: USA
, ZIP: 94080
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, COMPUTER READABLE FORM:
, MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
, COMPUTER: IBM PC compatible
, OPERATING SYSTEM: PC-DOS/MS-DOS
, SOFTWARE: WinPatIn (Genentech)
, CURRENT APPLICATION DATA:
, APPLICATION NUMBER: US/11/035,787
, FILING DATE: 14-Jan-2005
, CLASSIFICATION: <Unknown>
, PRIOR APPLICATION DATA:
, APPLICATION NUMBER: 09/480,977
, FILING DATE: 11-Jan-2000
, APPLICATION NUMBER: 08/899,437
, FILING DATE: 24-Jul-1997
, ATTORNEY/AGENT INFORMATION:
, NAME: Conley, Deirdre L.
, REGISTRATION NUMBER: 36,487
, REFERENCE/DOCKET NUMBER: P1084R1C3
, TELECOMMUNICATION INFORMATION:
, TELEPHONE: 650/225-2066
, TELEFAX: 650/952-9881
, INFORMATION FOR SEQ ID NO: 6:
, SEQUENCE CHARACTERISTICS:
, LENGTH: 720 amino acids
, TYPE: Amino Acid
, TOPOLOGY: Linear
,
, FEATURE:
, NAME/KEY: hNRG3b1 amino acid sequence
, LOCATION: 1-720
, IDENTIFICATION METHOD:
, OTHER INFORMATION:
,
, SEQUENCE DESCRIPTION: SEQ ID NO: 6:
,
, US-11-035-787-6
,
, Query Match 81.9%; Score 689.5; DB 20; 1
, Best Local Similarity 92.3%; Pred. No. 2.2e-63;
, Matches 131; Conservative 4; Mismatches 4;
,
, Qy 1 SSSSSATTTTPTSTSPGKHHTTTTSTERSHFKPCRDKOLAY
, Db 256 SSSSSATTTTPTSTSPGKHHTTTTSTERSHFKPCRDKOLAY
,
, Qy 61 HCRCCKGYGVRCDQFLPKTDSILSDP-NHLGLEEFMESEEVY
, Db 316 HCRCCKGYGVRCDQFLPKTDSILSDP-DHLGLEEFMESEEVY
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, Qy 120 MFCAAFYFKSKRNITANSVSEE 141
, Db 376 MFCAAFYFKSKKQ--AKQIQEQ 395
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, RESULT 14
, US-10-609-370-22
, Sequence 22, Application US/10609370
, Publication No. US20040048295A1
, GENERAL INFORMATION:
, APPLICANT: Young et al.
, TITLE OF INVENTION: Hereregulin-Like Factor
, FILE REFERENCE: PF383D1
, CURRENT APPLICATION NUMBER: US/10/609,370
, CURRENT FILING DATE: 2003-07-01
, PRIOR APPLICATION NUMBER: 09/097,681
, PRIOR FILING DATE: 1998-06-16
, PRIOR APPLICATION NUMBER: 60/049,942
, PRIOR FILING DATE: 1997-06-17
, NUMBER OF SEQ ID NOS: 22
, SOFTWARE: PatentIn version 3.2
, SEQ ID NO 22

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; LENGTH: 720
; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-609-370-22

Query Match      81.5%; Score 686.5; DB 15; Length 720;
Best Local Similarity 91.5%; Pred. No. 4.5e-63;
Matches 130; Conservative 5; Mismatches 4; Indels 3; Gaps 2;

Qy 1 SSSSATTTPETSTSPKPHHTTSTYSTERSEHPKPCRDKDLAYCLNDGECFVIETLTGSHK 60
Db 256 SSSSSTTTTPTSTSPKPHHTTSTYSTERSEHPKPCRDKDLAYCLNDGECFVIETLTGSHK 315

Qy 61 HCRCKEGYQVRCDOFLPKTDSILSDP-NHLGIEFMESEEVYQROVLSTISCIIFGIVIVGM 119
Db 316 HCRCKEGYQVRCDOFLPKTDSILSDP-NHLGIEFMESEEVYQROVLSTISCIIFGIVIVGM 375

Qy 120 MCAAFFPKSKRNITANSVSE 141
Db 376 MCAAFFPKSKKQ--AKQIQEQ 395

RESULT 15
US-09-817-647-2
; Sequence 2, Application US/09817647
; Patent No. US20020082229A1
; GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
;   Ligands and Uses Therefor
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: WinPatIn (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/817,647
; FILING DATE: 26-Mar-2001
; CLASSIFICATION: <unknown>
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 09/107,979
; FILING DATE: <unknown>
; ATTORNEY/AGENT INFORMATION:
; NAME: Conley, Deirdre L.
; REGISTRATION NUMBER: 36,487
; REFERENCE/DOCKET NUMBER: P1084R1-2
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650/225-2066
; TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 2:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 713 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
; FEATURE:
; NAME/KEY: Mouse NRG3 (mNRG3)/amino acid seq.
; LOCATION: 1-713
; IDENTIFICATION METHOD:
; OTHER INFORMATION:
; SEQUENCE DESCRIPTION: SEQ ID NO: 2:
US-09-817-647-2

Query Match      80.1%; Score 674.5; DB 9; Length 713;
Best Local Similarity 90.7%; Pred. No. 8.1e-62;
Matches 127; Conservative 6; Mismatches 4; Indels 3; Gaps 2;
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Qy 2 SSSSATTTPETSTSPKPHHTTSTYSTERSEHPKPCRDKDLAYCLNDGECFVIETLTGSHKH 61
Db 259 SSSSSTTTTPTSTSPKPHHTTSTYSTERSEHPKPCRDKDLAYCLNDGECFVIETLTGSHKH 318

Qy 62 CRCKEGYQVRCDOFLPKTDSILSDP-NHLGIEFMESEEVYQROVLSTISCIIFGIVIVGM 120
Db 319 CRCKEGYQVRCDOFLPKTDSILSDP-NHLGIEFMESEEVYQROVLSTISCIIFGIVIVGM 378

Qy 121 FCAAFFPKSKRNITANSVSE 140
Db 379 FCAAFFPKSKKQ--AKQIQEQ 396
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Search completed: July 13, 2005, 20:32:17  
Job time : 165 secs

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OM protein - protein search, using sw model

Run on: July 13, 2005, 20:14:46 ; Search time 161 Seconds  
(without alignments)  
377.151 Million cell updates/sec

Title: us-10-609-370-2

Perfect score: 842  
Sequence: 1 SSSSATTTPETSTSPKFH.....VSEBWKGLSPQNLOQDK 157

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 2105692 seqs, 386760381 residues

Total number of hits satisfying chosen parameters: 2105692

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : A\_Geneseq\_16Dec04.\*

- 1: Geneseqp1980s.\*
- 2: Geneseqp1990s.\*
- 3: Geneseqp2000s.\*
- 4: Geneseqp2001s.\*
- 5: Geneseqp2002s.\*
- 6: Geneseqp2003as.\*
- 7: Geneseqp2003bs.\*
- 8: Geneseqp2004s.\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

# SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	842	100.0	157	2	AAW05451 Human her
2	842	100.0	157	8	ADN48870 Human her
3	689.5	81.9	696	2	AAW97619 Human neu
4	689.5	81.9	696	5	ABG32080 Novel hum
5	689.5	81.9	720	2	AAW97618 Human neu
6	689.5	81.9	720	5	ABG32065 Human nov
7	686.5	81.5	720	2	AAW05452 Human her
8	686.5	81.5	720	8	ADN48890 Human her
9	674.5	80.1	713	2	AAW97617 Mouse neu
10	674.5	80.1	713	5	ABG32061 Mouse nov
11	658.5	78.2	502	5	ABB08776 Human neu
12	552.5	65.6	360	2	AAW97621 Human neu
13	539.5	64.1	362	2	AAW97620 Mouse neu
14	305	36.2	52	6	AAE336807 Human neu
15	282	33.5	48	5	AAE66046 Mouse NRG
16	277	32.9	47	2	AAW97622 Human neu
17	251.5	29.9	478	4	AAW48101 CRD domai
18	251.5	29.9	700	4	AAW67745 Amino aci
19	246.5	29.3	1070	4	AAW48099 Amino aci
20	246.5	29.3	1070	4	AAE08550 Chicken n
21	241.5	28.7	675	2	AAW74491 Amino aci
22	237.5	28.2	675	2	AAW74494 Amino aci
23	237.5	28.2	675	2	AAW74493 Amino aci
24	237.5	28.2	675	3	AAW71198 Human Her
25	237.5	28.2	675	3	AAW71203 Human Her

26	236.5	28.1	675	2	AAW74503 Amino aci
27	236.5	28.1	675	2	AAW74490 Amino aci
28	235.5	28.0	675	2	AAW74492 Amino aci
29	235.5	28.0	675	3	AAW71192 Human Her
30	235.5	28.0	675	3	AAW71186 Human Her
31	235.5	28.0	675	3	AAW71180 Human Her
32	235.5	28.0	675	3	AAW71193 Human Her
33	235.5	28.0	782	4	AAW67751 Amino aci
34	234.5	27.9	252	5	ABJ00036 Human neu
35	234.5	27.9	252	5	ABJ00074 Human neu
36	234.5	27.9	252	8	ADH77513 Human neu
37	234.5	27.9	254	4	AAW67926 Human NRG
38	234.5	27.9	254	4	AAW67964 Human NRG
39	234.5	27.9	548	5	ABJ00037 Human neu
40	234.5	27.9	548	5	ABJ00075 Human neu
41	234.5	27.9	548	8	ADH77514 Human neu
42	234.5	27.9	551	2	AAW68565 Human NDF
43	234.5	27.9	552	4	AAW67927 Human NRG
44	234.5	27.9	552	4	AAW67965 Human NRG
45	234.5	27.9	637	8	ADH77498 Human neu

## ALIGNMENTS

### RESULT 1

AAW05451

ID AAY05451 standard; protein; 157 AA.

XX AC AAY05451;

DT 06-JUL-1999 (first entry)

XX DE Human heregulin-like factor sequence.

XX KW Human heregulin-like factor; HLF; cell growth regulator; diagnosis;

XX KW neural system disorder; cancer.

XX OS Homo sapiens.

XX PN WO9857989-A1.

XX PD 23-DEC-1998.

XX PF 16-JUN-1998; 98WO-US012403.

XX PR 17-JUN-1997; 97US-0049942P.

XX PA (HUMA-) HUMAN GENOME SCI INC.

XX PI (GEOU ) UNIV GEORGETOWN.

XX DR Young P, Ruben SM, King CR, Hijazi MW;

XX DR WPI; 1999-095327/08.

XX DR N-PSDB; AAX36423.

XX PT New isolated heregulin-like factor - used to develop products for the diagnosis and treatment of disorders involving regulation of cell growth, particularly cancers.

XX PS Claim 17; Page 86-87; 118pp; English.

XX CC This sequence is the human heregulin-like factor (HLF) of the invention. The HLF is involved in the regulation of cell growth. Detection of different levels of expression of the HLF gene can be used for the diagnosis of disorders, e.g. in the neural system. In particular, detection of different levels of HLF gene expression in cells or body fluid of an individual can be used for diagnosing cancer. The products can also be used in the treatment of disorders involving abnormal levels of HLF activity

XX SQ Sequence 157 AA;

```
Query Match      100.0%; Score 842; DB 2; Length 157;
Best Local Similarity 100.0%; Pred. No. 1.6e-74;
Matches 157; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 SSSSSATTTTPESTSPKFTTTTSTERSHFKPCRDKDLAYCLNDGECFVIETLTGSHK 60
   |||
Db 1 SSSSSATTTTPESTSPKFTTTTSTERSHFKPCRDKDLAYCLNDGECFVIETLTGSHK 60
   |||

QY 61 HCRCKEGYQGVRCDOFLPKTDSILSDPNHLGIEPMESEEVYQVLSISCIIFGIVGM 120
   |||
Db 61 HCRCKEGYQGVRCDOFLPKTDSILSDPNHLGIEPMESEEVYQVLSISCIIFGIVGM 120
   |||

QY 121 FCAAFYFKSKRNITANSVSERWKGLPSQBPNLQDDK 157
   |||
Db 121 FCAAFYFKSKRNITANSVSERWKGLPSQBPNLQDDK 157
   |||

QY 121 FCAAFYFKSKRNITANSVSERWKGLPSQBPNLQDDK 157
   |||
Db 121 FCAAFYFKSKRNITANSVSERWKGLPSQBPNLQDDK 157
   |||

RESULT 2
ADN48870
ID ADN48870 standard; protein; 157 AA.
XX
AC ADN48870;
XX
DT 15-JUL-2004 (first entry)
XX
DE Human heregulin-like factor (HLF) protein.
XX
KW HLF; heregulin-like factor; diagnosis; cancer; gene therapy; human.
XX
OS Homo sapiens.
XX
FH Key Location/Qualifiers
FT Domain 26..93
FT /note = EGF domain
XX
PN US6727077-B1.
XX
XX 27-APR-2004.
XX
XX 16-JUN-1998; 98US-00097681.
XX
XX 17-JUN-1997; 97US-0049492P.
XX
XX (HUMA-) HUMAN GENOME SCI INC.
XX (GEOU ) UNIV GEORGETOWN MEDICAL CENT.
XX
XX Young PE, King CR, Hijazi M, Ruben SM;
XX WPI; 2004-338520/31.
XX N-PSDB; ADN48869.
XX
XX New heregulin-like factor (HLF) nucleic acid or polypeptide, useful for
XX preparing a composition for diagnosing or treating cancer.
XX
XX Claim 1; SEQ ID NO 2; 48pp; English.
XX
XX The present invention relates to novel heregulin-like factor (HLF)
XX polypeptides and the encoding polynucleotides. The invention is useful
XX for preparing a composition for diagnosing and treating cancer. The
XX invention is also useful in gene therapy. The present sequence is human
XX heregulin-like factor (HLF) protein.
XX
XX Sequence 157 AA;

Query Match      100.0%; Score 842; DB 8; Length 157;
Best Local Similarity 100.0%; Pred. No. 1.6e-74;
Matches 157; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 SSSSSATTTTPESTSPKFTTTTSTERSHFKPCRDKDLAYCLNDGECFVIETLTGSHK 60
   |||
Db 1 SSSSSATTTTPESTSPKFTTTTSTERSHFKPCRDKDLAYCLNDGECFVIETLTGSHK 60
   |||

QY 61 HCRCKEGYQGVRCDOFLPKTDSILSDPNHLGIEPMESEEVYQVLSISCIIFGIVGM 120
   |||
Db 61 HCRCKEGYQGVRCDOFLPKTDSILSDPNHLGIEPMESEEVYQVLSISCIIFGIVGM 120
   |||

QY 121 FCAAFYFKSKRNITANSVSERWKGLPSQBPNLQDDK 157
   |||
Db 121 FCAAFYFKSKRNITANSVSERWKGLPSQBPNLQDDK 157
   |||

QY 121 FCAAFYFKSKRNITANSVSERWKGLPSQBPNLQDDK 157
   |||
Db 121 FCAAFYFKSKRNITANSVSERWKGLPSQBPNLQDDK 157
   |||

RESULT 3
AAW97619
ID AAW97619 standard; protein; 696 AA.
XX
AC AAW97619;
XX
DT 10-MAY-1999 (first entry)
XX
DE Human neuregulin related ligand NRG3 (splice variant).
XX
KW Neuregulin related ligand; NRG3; hNRG3B1; human; ErbB4 receptor;
KW signal transduction; nervous system disorder; neurodegeneration;
KW neuropathy; therapy; diagnosis; splice variant.
XX
OS Homo sapiens.
XX
FH Key Location/Qualifiers
FT Domain 1..360
FT /note = "extracellular domain, specifically claimed in
FT Claim 5(a)"
FT Region 66..91
FT /note = "hydrophobic region"
FT Region 101..284
FT /note = "mucin-like Ser/Thr-rich region, contains sites
FT for O-linked glycosylation"
FT Domain 285..354
FT /note = "EGF-like domain"
FT Domain 356..394
FT /note = "transmembrane domain"
XX
XX WO9902681-A1.
XX
XX 21-JAN-1999.
XX
XX 30-JUN-1998; 98WO-US013411.
XX
XX 09-JUL-1997; 97US-0052019P.
XX 24-JUL-1997; 97US-00899437.
XX
XX (GETH ) GENENTECH INC.
XX
XX Godowski PJ, Mark MR, Zhang D;
XX WPI; 1999-120882/10.
XX N-PSDB; AAW06989.
XX
XX New isolated neuregulin related ligand-3 - used to develop products for
XX treating nervous system disorders, e.g. stroke, ischaemia, infection,
XX malignancy, Alzheimer's disease or Down's syndrome.
XX
XX Example 1; Page 78-81; 101pp; English.
XX
XX This is the amino acid sequence of splice variant hNRG3B2 of human
XX neuregulin related ligand NRG3, a novel member of the epidermal growth
XX factor (EGF)-like family of protein ligands that binds to the ErbB4
XX receptor, but not to the ErbB2 or ErbB3 receptor, and which activates
XX ErbB4 receptor tyrosine phosphorylation. The sequence was deduced from
XX the nucleotide sequence of a cDNA clone (see AAW06989) from a foetal
XX brain library. hNRG3B2 lacks amino acids 529-552 of hNRG3B1 (see
XX AAW97618) but retains the EGF-like domain and is expected to exhibit
XX biological activity. The invention provides human and murine NRG3
XX polypeptides (see AAW97617), expression vectors, host cells and methods
XX for the recombinant production of NRG3s. The NRG3 polypeptides and
XX polynucleotides and can be used to enhance the survival, proliferation or
XX differentiation of cells having the ErbB4 receptor in vivo and in vitro.
```

CC They can be used to prevent or treat damage to a nerve or damage to other  
 CC NRG3-expressing or NRG3-responsive cells, e.g. brain, heart, or kidney  
 CC cells. In particular, they can be used to treat diseases which involve  
 CC neural cell growth such as demyelination, or damage or loss of glial  
 CC cells (e.g. multiple sclerosis). They can be used to treat patients whose  
 CC nervous system has been damaged by e.g. trauma, surgery, stroke,  
 CC ischaemia, infection, metabolic disease, nutritional deficiency,  
 CC malignancy, or toxic agents. NRG3 can also be used to treat motor neuron  
 CC disorders such as amyotrophic lateral sclerosis (Lou Gehrig's disease),  
 CC Bell's palsy, conditions involving spinal muscular atrophy or paralysis,  
 CC neurodegenerative disorders such as Alzheimer's disease, Parkinson's  
 CC disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's  
 CC syndrome, nerve deafness, and Meniere's disease. They can also be used to  
 CC treat neuropathies associated with systemic disease including post-polio  
 CC syndrome, hereditary neuropathies including Charcot-Marie-Tooth disease,  
 CC Refsum's disease, abetalipoproteinemia, Tangier disease, Krabbe's  
 CC Sottas syndrome, to treat disease of skeletal muscle of smooth muscle,  
 CC such as muscular dystrophy or diseases caused by skeletal or smooth  
 CC muscle wasting. The products can also be used for detection, diagnosis,  
 CC for the production of transgenic or knockout animals or for drug  
 CC screening  
 CC  
 SQ Sequence 696 AA;

Query Match 81.9%; Score 689.5; DB 2; Length 696;  
 Best Local Similarity 92.3%; Pred. No. 9.7e-59;  
 Matches 131; Conservative 4; Mismatches 4; Indels 3; Gaps 2;  
 QY 1 SSSSSATTTTPTSTSPKFTTSTYSTERSEHFPCRDKDLAYCLNDGECFVIETLTGSHK 60  
 DB 256 SSSSSATTTTPTSTSPKFTTSTYSTERSEHFPCRDKDLAYCLNDGECFVIETLTGSHK 315  
 QY 61 HCRCKEGYQGVRCDFLPKTDLSILSDP-NHLGIFMESEEVYQVLSISCIIFGIVVG 119  
 DB 316 HCRCKEGYQGVRCDFLPKTDLSILSDP-DHGLGIFMESEEVYQVLSISCIIFGIVVG 375  
 QY 120 MFCAAFYFKSKRNITANSVSEE 141  
 DB 376 MFCAAFYFKSKKQ--AKQIQEQ 395

RESULT 4  
 ABG32080  
 ID ABG32080 standard; protein; 696 AA.

XX AC ABG32080;  
 XX DT 05-NOV-2002 (first entry)  
 XX DE Novel human neuregulin related ligand NRG3B2.

XX Neuregulin related ligand; NRG3; neuroprotective; cell therapy;  
 KW epidermal growth factor-like domain; EGF-like domain; Bell's palsy;  
 KW ErbB4 receptor detection; amyotrophic lateral sclerosis; paralysis;  
 KW Lou Gehrig's disease; spinal muscular atrophy; multiple sclerosis;  
 KW neurodegenerative disorder; Alzheimer's disease; Parkinson's disease;  
 KW epilepsy; Huntington's chorea; Down's syndrome; nerve deafness;  
 KW Meniere's disease; neuropathy; distal sensorimotor neuropathy;  
 KW autonomic neuropathy; hereditary neuropathy; Charcot-Marie-Tooth disease;  
 KW Refsum's disease; Abetalipoproteinemia; Tangier disease;  
 KW Krabbe's disease; Metachromatic leukodystrophy; Fabry's disease;  
 KW Dejerine-Scottas syndrome; human; NRG2.

OS Homo sapiens.  
 XX US2002082229-A1.  
 XX PD 27-JUN-2002.  
 XX PP 26-MAR-2001; 2001US-00817647.  
 XX PR 24-JUL-1997; 97US-0053641P.

PR 30-JUN-1998; 98US-00107979.  
 PA (GETH ) GENENTECH INC.  
 PI Godowski PJ, Mark MR, Zhang D;  
 DR WPI; 2002-617760/66.  
 DR N-FSDB; ABK90730.

A new neuregulin related ligand designated NRG3 has an epidermal growth factor-like domain and binds to ErbB4 receptor, and is useful to prevent or treat NRG3 associated disorders, particularly nerve damage.

Example 1; Fig 4A-B; 60pp; English.

The invention describes a polypeptide comprising an amino acid sequence encoding an epidermal growth factor (EGF)-like domain, and having the binding characteristics of neuregulin related ligand (NRG3). NRG3 polypeptide can be used to detect ErbB4 receptor in a mammalian tissue sample, and also to prevent or treat disorders associated with NRG3 such as: amyotrophic lateral sclerosis (Lou Gehrig's disease), Bell's palsy, and various conditions involving spinal muscular atrophy or paralysis, neurodegenerative disorders such as Alzheimer's disease, Parkinson's disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's syndrome, nerve deafness, Meniere's disease, neuropathy such as distal sensorimotor neuropathy or autonomic neuropathy, hereditary neuropathies such as Charcot-Marie-Tooth disease, Refsum's disease, Abetalipoproteinemia, Tangier disease, Krabbe's disease, Metachromatic leukodystrophy, Fabry's disease and Dejerine-Scottas syndrome. This is the amino acid sequence of the novel human neuregulin related ligand NRG3B2

Sequence 696 AA;

Query Match 81.9%; Score 689.5; DB 5; Length 696;  
 Best Local Similarity 92.3%; Pred. No. 9.7e-59;  
 Matches 131; Conservative 4; Mismatches 4; Indels 3; Gaps 2;  
 QY 1 SSSSSATTTTPTSTSPKFTTSTYSTERSEHFPCRDKDLAYCLNDGECFVIETLTGSHK 60  
 DB 256 SSSSSATTTTPTSTSPKFTTSTYSTERSEHFPCRDKDLAYCLNDGECFVIETLTGSHK 315  
 QY 61 HCRCKEGYQGVRCDFLPKTDLSILSDP-NHLGIFMESEEVYQVLSISCIIFGIVVG 119  
 DB 316 HCRCKEGYQGVRCDFLPKTDLSILSDP-DHGLGIFMESEEVYQVLSISCIIFGIVVG 375  
 QY 120 MFCAAFYFKSKRNITANSVSEE 141  
 DB 376 MFCAAFYFKSKKQ--AKQIQEQ 395

RESULT 5  
 AAW97618  
 ID AAW97618 standard; protein; 720 AA.

XX AC AAW97618;  
 XX DT 10-MAY-1999 (first entry)  
 XX DE Human neuregulin related ligand NRG3.

XX Neuregulin related ligand; NRG3; hNRG3B1; human; ErbB4 receptor;  
 KW signal transduction; nervous system disorder; neurodegeneration;  
 KW neuropathy; therapy; diagnosis.

OS Homo sapiens.  
 XX Key Location/Qualifiers  
 XX FH 1..360  
 FT Domain /note= "extracellular domain, specifically claimed in Claim 5(a)"  
 FT Region 66..91  
 FT /note= "hydrophobic region"

FT Region 101..284  
 FT /note= "mucin-like Ser/Thr-rich region, contains sites  
 FT for O-linked glycosylation"  
 FT 285..354  
 FT /note= "EGF-like domain"  
 FT 356..394  
 FT /note= "transmembrane domain"  
 XX WO9902681-A1.  
 XX 21-JAN-1999.  
 XX 30-JUN-1998; 98WO-US013411.  
 XX 09-JUL-1997; 97US-0052019P.  
 XX 24-JUL-1997; 97US-00899437.  
 XX (GETH ) GENENTECH INC.  
 XX Godowski PJ, Mark MR, Zhang D;  
 XX WPI; 1999-120882/10.  
 XX N-PSDB; AAX06988.  
 XX New isolated neuregulin related ligand-3 - used to develop products for  
 XX treating nervous system disorders, e.g. stroke, ischaemia, infection,  
 XX malignancy, Alzheimer's disease or Down's syndrome.  
 XX Claim 5(b); Page 66-69; 101pp; English.  
 XX This is the amino acid sequence of human neuregulin related ligand NRG3,  
 CC a novel member of the epidermal growth factor (EGF)-like family of  
 CC protein ligands that binds to the ErbB4 receptor, but not to the ErbB2 or  
 CC ErbB3 receptor, and which activates ErbB4 receptor tyrosine  
 CC phosphorylation. The sequence was deduced from the nucleotide sequence of  
 CC a cDNA clone (see AAX06988) from a foetal brain library. The EGF-like  
 CC domain of NRG3 is distinct from those of NRG1 or NRG2, and NRG3 displays  
 CC receptor binding characteristics that are distinct from those of other  
 CC neuregulins. An alternatively spliced form of human NRG3 is provided in  
 CC AAW97619. The invention provides human and murine NRG3 polypeptides (see  
 CC also AAW97617), expression vectors, host cells and methods for the  
 CC recombinant production of NRG3s. The NRG3 polypeptides and  
 CC polynucleotides and can be used to enhance the survival, proliferation or  
 CC differentiation of cells having the ErbB4 receptor in vivo and in vitro.  
 CC They can be used to prevent or treat damage to a nerve or damage to other  
 CC NRG3-expressing or NRG3-responsive cells, e.g. brain, heart, or kidney  
 CC cells. In particular, they can be used to treat diseases which involve  
 CC neural cell growth such as demyelination, or damage or loss of glial  
 CC cells (e.g. multiple sclerosis). They can be used to treat patients whose  
 CC nervous system has been damaged by e.g. trauma, surgery, stroke,  
 CC ischaemia, infection, metabolic disease, nutritional deficiency,  
 CC malignancy, or toxic agents. NRG3 can also be used to treat motor neuron  
 CC disorders such as amyotrophic lateral sclerosis (Lou Gehrig's disease),  
 CC Bell's palsy, conditions involving spinal muscular atrophy or paralysis,  
 CC neurodegenerative disorders such as Alzheimer's disease, Parkinson's  
 CC disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's  
 CC syndrome, nerve deafness, and Meniere's disease. They can also be used to  
 CC treat neuropathies associated with systemic disease including post-polio  
 CC syndrome, hereditary neuropathies including Charcot-Marie-Tooth disease,  
 CC Refsum's disease, abetalipoproteinemia, Tangier disease and Dejerine-  
 CC Sottas syndrome, to treat disease of skeletal muscle of smooth muscle,  
 CC such as muscular dystrophy or diseases caused by skeletal or smooth  
 CC muscle wasting. The products can also be used for detection, diagnosis,  
 CC for the production of transgenic or knockout animals or for drug  
 CC screening  
 XX  
 XX Sequence 720 AA;  
 Query Match 81.9%; Score 689.5; DB 2; Length 720;  
 Best Local Similarity 92.3%; Pred. No. 1e-58;  
 Matches 131; Conservative 4; Mismatches 4; Indels 3; Gaps 2;

QY 1 SSSSSATTTTPTSTSPKFHTTTTSTERSSEHFKPCRDKOLAYCLNDGECFVIETLTGSHK 60  
 DB 256 SSSSSATTTTPTSTSPKFHTTTTSTERSSEHFKPCRDKOLAYCLNDGECFVIETLTGSHK 315  
 QY 61 HCRCCKGYQGVRCQDFLPKTDLSILSDP-NHLGTFEFSSEVYQVQLVLSICIIFGIVIG 119  
 DB 316 HCRCCKGYQGVRCQDFLPKTDLSILSDPDLHLGTFEFSSEVYQVQLVLSICIIFGIVIG 375  
 QY 120 MFCAAFYFKSKRNITANSVSEE 141  
 DB 376 MFCAAFYFKSKQ--AKQIQEQ 395  
 RESULT 6  
 ABG32065  
 ID ABG32065 standard; protein; 720 AA.  
 XX AC ABG32065;  
 XX 05-NOV-2002 (first entry)  
 XX Human novel neuregulin related ligand NRG3B1.  
 XX Neuregulin related ligand; NRG3; neuroprotective; cell therapy;  
 KW epidermal growth factor-like domain; EGF-like domain; Bell's palsy;  
 KW ErbB4 receptor detection; amyotrophic lateral sclerosis; paralysis;  
 KW Lou Gehrig's disease; spinal muscular atrophy; multiple sclerosis;  
 KW neurodegenerative disorder; Alzheimer's disease; Parkinson's disease;  
 KW epilepsy; Huntington's chorea; Down's syndrome; nerve deafness;  
 KW Meniere's disease; neuropathy; distal sensorimotor neuropathy;  
 KW autonomic neuropathy; hereditary neuropathy; Charcot-Marie-Tooth disease;  
 KW Refsum's disease; Abetalipoproteinemia; Tangier disease;  
 KW Krabbe's disease; Metachromatic leukodystrophy; Fabry's disease;  
 KW Dejerine-Scottas syndrome; human; gene; ss; NRG3B1.  
 XX Homo sapiens.  
 XX Key Location/Qualifiers  
 FT Domain 1..360  
 FT /label= Extracellular domain  
 FT /note= "Specifically Claimed in claim 5"  
 FT Domain 286..332  
 FT /label= EGF-like domain  
 FT /note= "Extracellular epidermal growth factor-like domain"  
 XX US2002082229-A1.  
 XX 27-JUN-2002.  
 XX 26-MAR-2001; 2001US-00817647.  
 XX 24-JUL-1997; 97US-0053641P.  
 XX 30-JUN-1998; 98US-00107979.  
 XX (GETH ) GENENTECH INC.  
 XX Godowski PJ, Mark MR, Zhang D;  
 XX WPI; 2002-617760/66.  
 XX N-PSDB; ABK90731.  
 XX A new neuregulin related ligand designated NRG3 has an epidermal growth  
 PT factor-like domain and binds to ErbB4 receptor, and is useful to prevent  
 PT or treat NRG3 associated disorders, particularly nerve damage.  
 XX Example 1; Fig 4A-B; 60pp; English.  
 XX The invention describes a polypeptide comprising an amino acid sequence  
 CC encoding an epidermal growth factor (EGF)-like domain, and having the  
 CC binding characteristics of neuregulin related ligand (NRG3). NRG3  
 CC polypeptide can be used to detect ErbB4 receptor in a mammalian tissue  
 CC sample, and also to prevent or treat disorders associated with NRG3 such



QY 61 HCRCKGYQGVRCDFLPKTDLSLDP-NHLGIEFMESEVYQORVLSICIFGIVVG 119  
 DB 316 HCRCKGYQGVRCDFLPKTDLSLDP-TDHLGIEFMESEVYQORVLSICIFGIVVG 375  
 QY 120 MFCAAFYFKSKRNITANSVSE 141  
 DB 376 MFCAAFYFKSKQ--AKQIQE 395  
 RESULT 9  
 AAW97617  
 ID AAW97617 standard; protein; 713 AA.  
 AC AAW97617;  
 XX  
 DT 10-MAY-1999 (first entry)  
 XX  
 DE Mouse neuregulin related ligand NRG3.  
 XX  
 KW Neuregulin related ligand; NRG3; mouse; ErbB4 receptor;  
 KW signal transduction; nervous system disorder; neurodegeneration;  
 KW neuropathy; therapy; diagnosis.  
 XX  
 OS Mus sp.  
 XX  
 FH Key Location/Qualifiers  
 FT Domain 1..362  
 FT Note="extracellular domain, specifically claimed in  
 FT Claim 5(a)"  
 FT Region 66..91  
 FT Note="hydrophobic region"  
 FT Region 105..286  
 FT Note="mucin-like Ser/Thr-rich region, contains sites  
 FT for O-linked glycosylation"  
 FT Domain 287..334  
 FT Note="EGF-like domain"  
 FT Domain 363..385  
 FT Note="transmembrane domain"  
 XX  
 XX WO9902681-A1.  
 XX  
 XX 21-JAN-1999.  
 XX  
 XX 30-JUN-1998; 98WO-US013411.  
 XX  
 XX 09-JUL-1997; 97US-0052019P.  
 XX 24-JUL-1997; 97US-00899437.  
 XX  
 XX (GETH ) GENENTECH INC.  
 XX  
 XX Godowski PJ, Mark MR, Zhang D;  
 XX  
 XX WPI; 1999-120882/10.  
 XX N-PSDB; AAX06987.  
 XX  
 XX New isolated neuregulin related ligand-3 - used to develop products for  
 XX treating nervous system disorders, e.g. stroke, ischaemia, infection,  
 XX malignancy, Alzheimer's disease or Down's syndrome.  
 XX  
 XX Claim 5(b); Page 59-62; 101pp; English.  
 XX  
 XX This is the amino acid sequence of murine neuregulin related ligand NRG3,  
 XX a novel member of the epidermal growth factor (EGF)-like family of  
 XX protein ligands that binds to the ErbB4 receptor, but not to the ErbB2 or  
 XX ErbB3 receptor, and which activates ErbB4 receptor tyrosine  
 XX phosphorylation. The sequence was deduced from the nucleotide sequences  
 XX of cDNA clones (see AAX06987) from a mouse brain library. The EGF-like  
 XX domain of NRG3 is distinct from those of NRG1 or NRG2, and NRG3 displays  
 XX receptor binding characteristics that are distinct from those of other  
 XX neuregulins. The invention provides human and murine NRG3 polypeptides  
 XX (see also AAW97618), expression vectors, host cells and methods for the  
 XX recombinant production of NRG3s. The NRG3 polypeptides and

CC polynucleotides and can be used to enhance the survival, proliferation or  
 CC differentiation of cells having the ErbB4 receptor in vivo and in vitro.  
 CC They can be used to prevent or treat damage to a nerve or damage to other  
 CC NRG3-expressing or NRG3-responsive cells, e.g. brain, heart, or kidney  
 CC cells. In particular, they can be used to treat diseases which involve  
 CC neural cell growth such as demyelination, or damage or loss of glial  
 CC cells (e.g. multiple sclerosis). They can be used to treat patients whose  
 CC nervous system has been damaged by e.g. trauma, surgery, stroke,  
 CC ischaemia, infection, metabolic disease, nutritional deficiency,  
 CC malignancy, or toxic agents. NRG3 can also be used to treat motor neuron  
 CC disorders such as amyotrophic lateral sclerosis (Lou Gehrig's disease),  
 CC Bell's palsy, conditions involving spinal muscular atrophy or paralysis,  
 CC neurodegenerative disorders such as Alzheimer's disease, Parkinson's  
 CC disease, epilepsy, multiple sclerosis, and Meniere's disease. They can also be used to  
 CC treat neuropathies associated with systemic disease including post-polio  
 CC syndrome, hereditary neuropathies including Charcot-Marie-Tooth disease,  
 CC Refsum's disease, abetalipoproteinemia, Tangier disease, Krabbe's  
 CC disease, metachromatic leukodystrophy, Fabry's disease and Dejerine-  
 CC Sottas syndrome, to treat disease of skeletal muscle of smooth muscle,  
 CC such as muscular dystrophy or diseases caused by skeletal or smooth  
 CC muscle wasting. The products can also be used for detection, diagnosis,  
 CC for the production of transgenic or knockout animals or for drug  
 CC screening  
 CC  
 XX  
 XX Sequence 713 AA;  
 QY Query Match 80.1%; Score 674.5; DB 2; Length 713;  
 DB Best Local Similarity 90.7%; Pred. No. 3e-57; Indels 3; Gaps 2;  
 Matches 127; Conservative 6; Mismatches 3;  
 QY 2 SSSATTTTPTSTGPKFHTTSTYSTERSEHFPCRDKDLAYCLNDGECVFIETLTGSHKH 61  
 DB 259 SSTSTTTTPTSTGPKFHTTSTYSTERSEHFPCRDKDLAYCLNDGECVFIETLTGSHKH 318  
 QY 62 CRCKEGYQGVRCDFLPKTDLSLDP-NHLGIEFMESEVYQORVLSICIFGIVVG 120  
 DB 319 CRCKEGYQGVRCDFLPKTDLSLDP-TDHLGIEFMESEVYQORVLSICIFGIVVG 378  
 QY 121 FCAAFYFKSKRNITANSVSE 140  
 DB 379 FCAAFYFKSKQ--AKQIQE 396  
 RESULT 10  
 ABG32061  
 ID ABG32061 standard; protein; 713 AA.  
 XX  
 AC ABG32061;  
 XX  
 DT 05-NOV-2002 (first entry)  
 XX  
 DE Mouse novel neuregulin related ligand NRG3.  
 XX  
 KW Neuregulin related ligand; NRG3; neuroprotective; cell therapy;  
 KW epidermal growth factor-like domain; EGF-like domain; Bell's palsy;  
 KW ErbB4 receptor detection; amyotrophic lateral sclerosis; paralysis;  
 KW Lou Gehrig's disease; spinal muscular atrophy; multiple sclerosis;  
 KW neurodegenerative disorder; Alzheimer's disease; Parkinson's disease;  
 KW epilepsy; Huntington's chorea; Down's syndrome; nerve deafness;  
 KW Meniere's disease; neuropathy; distal sensorimotor neuropathy;  
 KW autonomic neuropathy; hereditary neuropathy; Charcot-Marie-Tooth disease;  
 KW Refsum's disease; Abetalipoproteinemia; Tangier disease;  
 KW Krabbe's disease; Metachromatic leukodystrophy; Fabry's disease;  
 KW Dejerine-Scottas syndrome; mouse.  
 XX  
 OS Mus sp.  
 XX  
 FH Key Location/Qualifiers  
 FT Domain 1..362  
 FT Note="Extracellular domain  
 FT /note="Specifically Claimed in claim 5"  
 FT Domain 288..334

PT /label= EGF-like domain  
FT /note= "Extracellular epidermal growth factor-like  
XX domain. Specifically claimed in claim 2"  
XX  
XX  
XX US2002082229-A1.  
XX  
XX 27-JUN-2002.  
XX  
XX 26-MAR-2001; 2001US-00817647.  
XX  
XX 24-JUL-1997; 97US-0053641P.  
XX PR 30-JUN-1998; 98US-00107979.  
XX  
XX (GETH ) GENENTECH INC.  
XX  
XX Godoweki PJ, Mark MR, Zhang D;  
XX N-PSDB; ABK90728.  
XX  
XX A new neuregulin related ligand designated NRG3 has an epidermal growth  
XX factor-like domain and binds to ErbB4 receptor, and is useful to prevent  
XX or treat NRG3 associated disorders, particularly nerve damage.  
XX  
XX Example 1; Fig 4A-B; 60pp; English.  
XX  
XX The invention describes a polypeptide comprising an amino acid sequence  
XX encoding an epidermal growth factor (EGF)-like domain, and having the  
XX binding characteristics of neuregulin related ligand (NRG3). NRG3  
XX polypeptide can be used to detect ErbB4 receptor in a mammalian tissue  
XX sample, and also to prevent or treat disorders associated with NRG3 such  
XX as: amyotrophic lateral sclerosis (Lou Gehrig's disease), Bell's palsy  
XX and various conditions involving spinal muscular atrophy or paralysis,  
XX neurodegenerative disorders such as Alzheimer's disease, Parkinson's  
XX disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's  
XX syndrome, nerve deafness, Meniere's disease, neuropathy such as distal  
XX sensorimotor neuropathy or autonomic neuropathy, hereditary neuropathies  
XX such as Charcot-Marie-Tooth disease, Retsum's disease,  
XX Abetalipoproteinemia, Tangier disease, Krabbe's disease, Metachromatic  
XX leukodystrophy, Fabry's disease and Dejerine-Scottas syndrome. This is  
XX the amino acid sequence of the novel mouse neuregulin related ligand  
XX (NRG3)  
XX  
XX Sequence 713 AA;  
XX  
XX Query Match 80.1%; Score 674.5; DB 5; Length 713;  
XX Best Local Similarity 90.7%; Pred. No. 3e-57;  
XX Matches 127; Conservative 6; Mismatches 4; Indels 3; Gaps 2;  
XX  
XX 2 SSSSATTTPETSTSPKFTTTTSTSEHFKPCRDKDLAYCLNDGECFVIETLTGSHKH 61  
XX 259 SSTSTTTTPTSTSPKFTTTTSTSEHFKPCRDKDLAYCLNDGECFVIETLTGSHKH 318  
XX  
XX 62 CRCKEGYGVRCQDQPLPKTDSILSDP-NHLGIEFMESEVYQVQLSICIFGIVIVGM 120  
XX 319 CRCKEGYGVRCQDQPLPKTDSILSDPDLHLGIEFMESEVYQVQLSICIFGIVIVGM 378  
XX  
XX 121 FCAAFYFKSKNITANSVSE 140  
XX 379 FCAAFYFKSKQ--AKQIQE 396  
XX  
XX  
XX RESULT 11  
XX ABB08776  
XX ID ABB08776 standard; protein; 502 AA.  
XX  
XX AC ABB08776;  
XX  
XX 16-MAY-2002 (first entry)  
XX  
XX DE Human neuregulin 55 SEQ ID NO 2.  
XX  
XX KW Human; neuregulin 55; nervous system; development; neuropsychopathy;

XX tumour; inflammation; immunological disease.  
XX Homo sapiens.  
XX CN1324826-A.  
XX  
XX 05-DEC-2001.  
XX  
XX 19-MAY-2000; 2000CN-00115761.  
XX  
XX 19-MAY-2000; 2000CN-00115761.  
XX (BODE-) BODE GENE DEV CO LTD SHANGHAI.  
XX  
XX Mao Y, Xie Y;  
XX WPI; 2002-217507/28.  
XX N-PSDB; ABL41244.  
XX  
XX New polypeptide human neuregulin 55 and polynucleotides for encoding  
XX same.  
XX  
XX Claim 1; Page 27-28 (Disclosure); 35pp; Chinese.  
XX  
XX The invention relates to human neuregulin 55, polynucleotide for coding  
XX this polypeptide and a method for producing this polypeptide by using DNA  
XX recombination technique. The invention also discloses the method for  
XX curing several diseases, such as nervous system developmental diseases,  
XX neuropsychopathy, other nervous system diseases, developmental disturbance,  
XX tumours, inflammations and immunological disease by using said  
XX polypeptide. The invention also discloses an antagonist for resisting  
XX said polypeptide and its therapeutic action and also discloses the  
XX application of polynucleotide to coding this novel human neuregulin 55.  
XX The present sequence is that of human neuregulin 55  
XX  
XX Sequence 502 AA;  
XX  
XX Query Match 78.2%; Score 558.5; DB 5; Length 502;  
XX Best Local Similarity 77.4%; Pred. No. 7.2e-56;  
XX Matches 130; Conservative 4; Mismatches 5; Indels 29; Gaps 3;  
XX  
XX 1 SSSSATTTPETSTSPKFTTTTSTSEHFKP 34  
XX 36 SSSSATTTPETSTSPKFRDRRHHAIHNGKTRVVRKQEQDTTTTYTERSEHFKP 95  
XX  
XX 35 CRDKLAYCLNDGECFVIETLTGSHKHCRCKEGYGVRCQDQPLPKTDSILSDP-NHLGIE 93  
XX 96 CRDKLAYCLNDGECFVIETLTGSHKHCRCKEGYGVRCQDQPLPKTDSILSDPTDHLGIE 155  
XX  
XX 94 FMESEVYQVQLSICIFGIVIVGMFCAAFYFKSKNITANSVSE 141  
XX 156 FMESEVYQVQLSICIFGIVIVGMFCAAFYFKSKQ--AKQIQEQ 201  
XX  
XX  
XX RESULT 12  
XX AAW97621  
XX ID AAW97621 standard; protein; 360 AA.  
XX  
XX AC AAW97621;  
XX  
XX 10-MAY-1999 (first entry)  
XX  
XX Human neuregulin related ligand NRG3 extracellular domain.  
XX  
XX Neuregulin related ligand; NRG3; hNRG3B1; human; ErbB4 receptor;  
XX signal transduction; nervous system disorder; neurodegeneration;  
XX neuropathy; therapy; diagnosis.  
XX  
XX Homo sapiens.  
XX OS  
XX WO9902681-A1.  
XX PN  
XX 21-JAN-1999.  
XX PD



XX	30-JUN-1998;	98WO-US013411.	
XX	09-JUL-1997;	97US-0052019P.	
PR	24-JUL-1997;	97US-00899437.	
XX	(GETH ) GENENTECH INC.		
XX	Godowski PJ, Mark MR, Zhang D;		
XX	WPI; 1999-120882/10.		
XX	New isolated neuregulin related ligand-3 - used to develop products for		
PT	treating nervous system disorders, e.g. stroke, ischaemia, infection,		
PT	malignancy, Alzheimer's disease or Down's syndrome.		
XX	Claim 5(a); Page 69-70; 101pp; English.		
XX	This is the extracellular domain (ECD, aal-360 of human neuregulin		
CC	related ligand NRG3 (see also AAW97618), a novel member of the epidermal		
CC	growth factor (EGF)-like family of protein ligands. NRG3 binds to the		
CC	ErbB4 receptor, but not to the ErbB2 or ErbB3 receptor, activates ErbB4		
CC	receptor tyrosine phosphorylation. The invention provides human and		
CC	murine polypeptides (see also AAW97617) that have at least 75% homology		
CC	to the NRG3 ECD, as well as expression vectors, host cells and methods		
CC	for the recombinant production of novel NRG3s. The NRG3 polypeptides and		
CC	polynucleotides and can be used to enhance the survival, proliferation or		
CC	differentiation of cells having the ErbB4 receptor in vivo and in vitro.		
CC	They can be used to prevent or treat damage to a nerve or damage to other		
CC	NRG3-expressing or NRG3-responsive cells, e.g. brain, heart, or kidney		
CC	cells. In particular, they can be used to treat diseases which involve		
CC	neural cell growth such as demyelination, or damage or loss of glial		
CC	cells (e.g. multiple sclerosis). They can be used to treat patients whose		
CC	nervous system has been damaged by e.g. trauma, surgery, stroke,		
CC	ischaemia, infection, metabolic disease, nutritional deficiency,		
CC	malignancy, or toxic agents. NRG3 can also be used to treat motor neuron		
CC	disorders such as amyotrophic lateral sclerosis (Lou Gehrig's disease),		
CC	Bell's palsy, conditions involving spinal muscular atrophy or paralysis,		
CC	neurodegenerative disorders such as Alzheimer's disease, Parkinson's		
CC	disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's		
CC	syndrome, nerve deafness, and Meniere's disease. They can also be used to		
CC	treat neuropathies associated with systemic disease including post-polio		
CC	syndrome, hereditary neuropathies including Charcot-Marie-Tooth disease,		
CC	Refsum's disease, abetalipoproteinemia, Tangier disease, Krabbe's		
CC	disease, metachromatic leukodystrophy, Fabry's disease and Dejerine-		
CC	Sottas syndrome, to treat disease of skeletal muscle of smooth muscle,		
CC	such as muscular dystrophy or diseases caused by skeletal or smooth		
CC	muscle wasting. The products can also be used for detection, diagnosis,		
CC	for the production of transgenic or knockout animals or for drug		
CC	screening		
XX			
SQ	Sequence 360 AA;		
	Query Match 65.6%; Score 552.5; DB 2; Length 360;		
	Best Local Similarity 98.1%; Pred. No. 1.2e-45;		
	Matches 103; Conservative 1; Mismatches 0; Indels 1; Gaps 1;		
QY	1 SSSSATTTPETSTSPKFTTTTSTERSHFPCRDKDLAYCLNDGECFVIETLTGSHK 60		
DB	256 SSSSATTTPETSTSPKFTTTTSTERSHFPCRDKDLAYCLNDGECFVIETLTGSHK 315		
QY	61 HCRCCKGYQVRCDDQFLPKTDSILSDP-NHLGIEFMESEVYQK 104		
DB	316 HCRCCKGYQVRCDDQFLPKTDSILSDP-TDHLGIEFMESEVYQK 360		
RESULT 13			
AAW97620			
ID	AAW97620 standard; protein; 362 AA.		
XX	AAW97620;		
XX	10-MAY-1999 (first entry)		
DT			
XX	Mouse neuregulin related ligand NRG3 extracellular domain.		
XX	Neuregulin related ligand; NRG3; mouse; ErbB4 receptor;		
KW	signal transduction; nervous system disorder; neurodegeneration;		
KW	neuropathy; therapy; diagnosis.		
XX	Mus sp.		
OS	WO9902681-A1.		
PN	21-JAN-1999.		
XX	30-JUN-1998; 98WO-US013411.		
XX	09-JUL-1997; 97US-0052019P.		
PR	24-JUL-1997; 97US-00899437.		
XX	(GETH ) GENENTECH INC.		
PA	Godowski PJ, Mark MR, Zhang D;		
XX	WPI; 1999-120882/10.		
XX	New isolated neuregulin related ligand-3 - used to develop products for		
PT	treating nervous system disorders, e.g. stroke, ischaemia, infection,		
PT	malignancy, Alzheimer's disease or Down's syndrome.		
XX	Claim 5(a); Page 62-63; 101pp; English.		
XX	This is the extracellular domain (ECD, aal-362) of murine neuregulin		
CC	related ligand NRG3 (see also AAW97617), a novel member of the epidermal		
CC	growth factor (EGF)-like family of protein ligands. NRG3 binds to the		
CC	ErbB4 receptor, but not to the ErbB2 or ErbB3 receptor, activates ErbB4		
CC	receptor tyrosine phosphorylation. The invention provides human and		
CC	murine polypeptides (see also AAW97618) that have at least 75% homology		
CC	to the NRG3 ECD, as well as expression vectors, host cells and methods		
CC	for the recombinant production of novel NRG3s. The NRG3 polypeptides and		
CC	polynucleotides and can be used to enhance the survival, proliferation or		
CC	differentiation of cells having the ErbB4 receptor in vivo and in vitro.		
CC	They can be used to prevent or treat damage to a nerve or damage to other		
CC	NRG3-expressing or NRG3-responsive cells, e.g. brain, heart, or kidney		
CC	cells. In particular, they can be used to treat diseases which involve		
CC	neural cell growth such as demyelination, or damage or loss of glial		
CC	cells (e.g. multiple sclerosis). They can be used to treat patients whose		
CC	nervous system has been damaged by e.g. trauma, surgery, stroke,		
CC	ischaemia, infection, metabolic disease, nutritional deficiency,		
CC	malignancy, or toxic agents. NRG3 can also be used to treat motor neuron		
CC	disorders such as amyotrophic lateral sclerosis (Lou Gehrig's disease),		
CC	Bell's palsy, conditions involving spinal muscular atrophy or paralysis,		
CC	neurodegenerative disorders such as Alzheimer's disease, Parkinson's		
CC	disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's		
CC	syndrome, nerve deafness, and Meniere's disease. They can also be used to		
CC	treat neuropathies associated with systemic disease including post-polio		
CC	syndrome, hereditary neuropathies including Charcot-Marie-Tooth disease,		
CC	Refsum's disease, abetalipoproteinemia, Tangier disease, Krabbe's		
CC	disease, metachromatic leukodystrophy, Fabry's disease and Dejerine-		
CC	Sottas syndrome, to treat disease of skeletal muscle of smooth muscle,		
CC	such as muscular dystrophy or diseases caused by skeletal or smooth		
CC	muscle wasting. The products can also be used for detection, diagnosis,		
CC	for the production of transgenic or knockout animals or for drug		
CC	screening		
XX			
SQ	Sequence 362 AA;		
	Query Match 64.1%; Score 539.5; DB 2; Length 362;		
	Best Local Similarity 95.2%; Pred. No. 2.3e-44;		
	Matches 99; Conservative 4; Mismatches 0; Indels 1; Gaps 1;		
QY	2 SSSSATTTPETSTSPKFTTTTSTERSHFPCRDKDLAYCLNDGECFVIETLTGSHK 61		
DB	259 SSTSSSTTTTTPETSTSPKFTTTTSTERSHFPCRDKDLAYCLNDGECFVIETLTGSHK 318		



Qy 62 CRCKEGYQGVRCDFPLKPTDILSDP-NHLGIEFMESEVYQK 104  
Db 319 CRCKEGYQGVRCDFPLKPTDILSDP-TDHLGIEFMESEVYQK 362

## RESULT 14

AAE36807  
ID AAE36807 standard; protein; 52 AA.

XX AC AAE36807;  
XX 07-AUG-2003 (first entry)  
XX Human neuregulin 3 EGF-like domain.  
XX Epidermal growth factor receptor; EGFR; therapy; psoriasis; carcinoma;  
XX cancer; rhabdomyosarcoma; mesothelioma; melanoma; glioblastoma; human;  
XX receptor; EGF; neuregulin 3.  
XX Homo sapiens.

OS  
XX WO2003014159-A1.

XX 20-FEB-2003.

XX 05-AUG-2002; 2002WO-AU001042.

XX 03-AUG-2001; 2001AU-00006827.

XX 03-AUG-2001; 2001AU-00006828.

XX 01-NOV-2001; 2001US-0335393P.

XX 01-NOV-2001; 2001US-0336560P.

XX 31-MAY-2002; 2002AU-00002731.

XX 11-JUN-2002; 2002US-0388171P.

XX (CSIR ) COMMONWEALTH SCI & IND RES ORG.

PA (BIOM-) BIOMOLECULAR RES INST LTD.

PA (HALL-) HALL INST MEDICAL RES WALTER & ELIZA.

PA (LUDW-) LUDWIG INST CANCER RES.

XX Adams TE, Burgess AW, Elleman TC, Garrett TPJ, Jorissen RN;

PI Lou M, Lovrecz GO, McKern NM, Nice EC, Ward CW;

XX WPI; 2003-268181/26.

DR Selecting or designing compounds that interact with or inhibit formation  
XX of active dimers of the EGF receptor family, and useful for the  
XX prevention and treatment of disorders, such as psoriasis and cancer of  
XX the breast, brain or colon.

PS Disclosure; Fig 2; 354pp; English.

XX The invention relates to a method of selecting or designing a compound  
XX that interacts with or inhibits the formation of active dimers of a  
XX receptor of the epidermal growth factor receptor (EGFR) family. The  
XX methods and compositions of the invention are useful for the prevention  
XX and treatment of disorders associated with signalling by a molecule of  
XX the EGF family such as psoriasis and cancer of the pancreas, breast,  
XX brain, colon, prostate, ovary, cervix, lung, head and neck, melanoma,  
XX rhabdomyosarcoma, mesothelioma, squamous carcinomas of the skin and  
XX glioblastomas. The present sequence is epidermal growth factor (EGF) like  
XX domain of human neuregulin 3 protein. This sequence is used to illustrate  
XX the method of the invention

XX Sequence 52 AA;

Query Match 36.2%; Score 305; DB 6; Length 52;

Best Local Similarity 100.0%; Pred. No. 2.2e-22;

Matches 52; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 30 EHFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDFLPKTD 81

Db 1 EHFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDFLPKTD 52

## RESULT 15

AAE66046  
ID AAG66046 standard; peptide; 48 AA.

XX AC AAG66046;

XX 27-FEB-2002 (first entry)

XX Mouse NRG-3 EGF-like motif sequence.

XX ErbB-4; neuregulin-4; NRG-4; pro-NRG-4; neuroprotective; vulnery;

XX cerebroprotective; vasotropic; antiparkinsonian; anticonvulsant;

XX cytosstatic; nootropic; EGF; NRG-3.

XX Mus musculus.

XX WO200181540-A2.

XX 01-NOV-2001.

XX 20-APR-2001; 2001WO-IL000371.

XX 21-APR-2000; 2000US-00553769.

XX (YEDA ) YEDA RES & DEV CO LTD.

XX Harari D, Yarden Y;

XX WPI; 2002-041398/05.

XX Novel ErbB-4 ligand, referred as neuregulin (NRG)-4 and polynucleotide  
XX sequences encoding NRG-4, useful for upregulating or downregulating ErbB-  
XX 4 receptor activity to treat Alzheimer's disease, stroke, gastric cancer.  
XX Disclosure; Fig 1c; 153pp; English.

XX The invention relates to a novel ErbB-4 ligand, neuregulin-4 (NRG-4). NRG  
XX -4 binds to mammalian ErbB-4 receptor and can be expressed by standard  
XX recombinant methodology. Pharmaceutical compositions comprising NRG-4 are  
XX useful for regulating an endogenous protein affecting ErbB-4 receptor  
XX activity in vivo. They are also useful for treating or preventing a  
XX disease condition or syndrome associated with dysregulation of an  
XX endogenous protein affecting ErbB-4 receptor activity, e.g., amyotrophic  
XX lateral sclerosis (Lou Gehrig's disease), Bell's palsy, spinal muscular  
XX atrophy, brain trauma, stroke, ischemia, Alzheimer's disease, Parkinson's  
XX disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's  
XX syndrome, nerve deafness, neuropathy, muscular dystrophy, extramammary  
XX Paget's disease, gastric, pancreatic, prostate, breast and ovarian  
XX cancer, cervical carcinoma, endometrial adenocarcinoma, pancreatic D  
XX cells-somatostatinoma and Zollinger-Ellison syndrome. The agent comprised  
XX in the pharmaceutical composition includes a polypeptide (e.g., a soluble  
XX ligand binding domain of ErbB-4 i.e., IgB4; or a monoclonal, polyclonal,  
XX humanized, single chain antibody or an immunoreactive derivative of an  
XX antibody) capable of binding the endogenous protein affecting ErbB-4  
XX receptor activity. Traceable synthetic/recombinant NRG-4-tagged molecules  
XX can serve as a diagnostic tool in which cells binding NRG-4 can be  
XX measured. Sequences AAG66044-53 represent the EGF-like motifs of various  
XX growth factors

XX Sequence 48 AA;

Query Match 33.5%; Score 282; DB 5; Length 48;

Best Local Similarity 100.0%; Pred. No. 3.7e-20;

Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 30 EHFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDFLP 77

Db 1 EHFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDFLP 48

Search completed: July 13, 2005, 20:24:53

Job time : 163 secs



GenCore version 5.1.6  
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OM protein - protein search, using sw model

Run on: July 13, 2005, 20:18:32 ; Search time 38 Seconds  
(without alignments)  
397.527 Million cell updates/sec

Title: US-10-609-370-2  
Perfect score: 842  
Sequence: 1 SSSSATTTPETSTSPKPH.....VSERWKGLPSQEPNLOQDK 157

Scoring table: BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 283416 seqs, 96216763 residues  
Total number of hits satisfying chosen parameters: 283416

Minimum DB seq length: 0  
Maximum DB seq length: 2000000000  
Post-processing: Minimum Match 0%  
Maximum Match 100%  
Listing first 45 summaries

Database : PIR 79.\*  
1: pir1.\*  
2: pir2.\*  
3: pir3.\*  
4: pir4.\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	674.5	80.1	713	2 T44447	neuregulin-3 [impo
2	234.5	27.9	645	2 B43273	heregulin, splice
3	224.5	26.7	602	2 A45769	acetylcholine rece
4	203	24.1	639	2 I61719	neu differentiatio
5	201	23.9	462	2 I38404	neu differentiatio
6	201	23.9	640	2 A43273	heregulin precurs
7	199	23.6	868	2 JC5701	ErbB kinase activa
8	197.5	23.5	636	2 I61718	neu differentiatio
9	196.5	23.3	637	2 C43273	heregulin precurs
10	191.5	22.7	350	2 I38403	neu differentiatio
11	189.5	22.5	662	2 I61722	neu differentiatio
12	171	20.3	860	2 JC5702	ErbB kinase activa
13	166	19.7	850	2 A56943	ErbB kinase activa
14	140	16.6	296	2 A56943	sensory/motor neur
15	137	16.3	125	2 I38405	neu differentiatio
16	128	15.2	241	2 S23359	glial growth facto
17	126	15.0	125	2 S62676	heregulin isoform
18	123.5	14.8	422	2 S32357	glial growth facto
19	123.5	14.7	230	2 A44074	probable EGF-like
20	123	14.6	175	2 I38408	neu differentiatio
21	123	14.6	241	2 D43273	heregulin precurs
22	121	14.4	230	2 A56210	neu differentiatio
23	111	13.2	177	2 A37408	betacellulin precu
24	111	13.2	294	2 A48844	TGF alpha-like pro
25	107.5	12.8	57	2 PC4415	ErbB kinase activa
26	105.5	12.5	162	2 S68401	epiregulin precurs
27	104.5	12.4	178	2 JC1467	betacellulin precu
28	101.5	12.1	142	1 WMV23C	growth factor - va
29	100.5	11.9	140	2 T30766	growth factor - va

30	99.5	11.8	140	1 WMV29	growth factor - va
31	99	11.8	264	2 T22380	hypothetical prote
32	99	11.8	2180	2 T29764	hypothetical prote
33	97.5	11.6	279	2 T16201	hypothetical prote
34	97	11.5	120	2 T34431	hypothetical prote
35	96.5	11.5	483	2 T24856	hypothetical prote
36	96.5	11.5	907	2 T27317	hypothetical prote
37	95.5	11.3	293	2 T40784	hypothetical zinc
38	95.5	11.3	1207	1 EGHU	epidermal growth f
39	94.5	11.2	520	2 G88846	protein T12A7.2 [i
40	93	11.0	1220	2 A56136	jagged protein pre
41	91.5	10.9	1133	1 EGRT	epidermal growth f
42	91	10.8	1217	1 EGMSMG	epidermal growth f
43	90.5	10.7	1643	2 T14274	variscan precursor
44	90	10.7	861	2 A48825	Notch homolog Mott
45	89	10.6	2139	2 A35672	crumbs protein - f

ALIGNMENTS

RESULT 1

T44447  
neuregulin-3 [imported] - mouse  
C:Species: Mus musculus (house mouse)  
C>Date: 21-Jan-2000 #sequence\_revision 21-Jan-2000 #text\_change 09-Jul-2004  
R:Zhang, D.; Sliwkowski, M.X.; Mark, M.; Frantz, G.; Akita, R.; Sun, Y.; Hillan, K.; Cro  
Proc. Natl. Acad. Sci. U.S.A. 94, 9562-9567, 1997  
A:Title: Neuregulin-3 (NRG3): A novel neural tissue-enriched protein that binds and acti  
A:Reference number: 222773; MUID:97420720; PMID:9275162  
A:Accession: T44447  
A:Status: preliminary; translated from GB/EMBL/DBJ  
A:Molecule type: mRNA  
A:Residues: 1-713 <ZHA>  
A:Cross-references: UNIPROT:O35181; EMBL:AF010130; NID:g2429163; PIDN:AAB70914.1; PID:g2  
C:Genetics:  
A:Gene: NRG3  
C:Superfamily: mouse neuregulin-3

Query Match	80.1%	Score	674.5	DB 2	Length	713			
Best Local Similarity	90.7%	Pred. No.	4.2e-55						
Matches	127	Conservative	6	Mismatches	4	Indels	3	Gaps	2
Qy	2	SSSATTTPETSTSPKPHITTTTSTSEHFPCRCRDLAYCLNDGECFVIETLTGSHKH	61						
Db	259	SSTSSTTTTPETSTSPKPHITTTTSTSEHFPCRCRDLAYCLNDGECFVIETLTGSHKH	318						
Qy	62	CRCKEGYQGVRCDOFLPKTDSILSDP-NHLGIEFMESEVYQROVLSISCIIFGIVIGM	120						
Db	319	CRCKEGYQGVRCDOFLPKTDSILSDPDHLGIEFMESEVYQROVLSISCIIFGIVIGM	378						
Qy	121	FCAAIFYKSKRNITANSVSE	140						
Db	379	FCAAIFYKSKRQ--AKQIQE	396						

RESULT 2

B43273  
heregulin, splice form beta 1 - human  
C:Species: Homo sapiens (man)  
C>Date: 31-Dec-1993 #sequence\_revision 31-Dec-1993 #text\_change 09-Jul-2004  
C:Accession: B43273; I38406  
R:Holmes, W.E.; Sliwkowski, M.X.; Akita, R.W.; Henzel, W.J.; Lee, J.; Park, J.W.; Yansau  
Science 256, 1205-1210, 1992  
A:Title: Identification of heregulin, a specific activator of p185(erbB2).  
A:Reference number: A43273; MUID:92271253; PMID:1350381  
A:Accession: B43273  
A:Status: preliminary; nucleic acid sequence not shown; not compared with conceptual tra  
A:Molecule type: mRNA  
A:Residues: 1-645 <HOL>  
A:Cross-references: UNIPROT:Q02297  
R:Wen, D.; Suggs, S.V.; Karunakaran, D.; Liu, N.; Cupples, R.L.; Luo, Y.; Janseen, A.M.;

Mol. Cell. Biol. 14, 1909-1919, 1994  
A;Title: Structural and functional aspects of the multiplicity of Neu differentiation factor  
A;Reference number: A56210; MUID:94158863; PMID:7509448  
A;Accession: I38406  
A;Status: preliminary; translated from GB/EMBL/DBJ  
A;Molecule type: mRNA  
A;Residues: 'A', 95-418, 'F', 420-645 <RES>  
A;Cross-references: EMBL:U02328; NID:g408406; PIDN:AAA19953.1; PID:g408407  
C;Genetics:  
A;Gene: GDB:HGL  
A;Cross-references: GDB:I32656; OMIM:142445  
A;Map position: 9p22-8p11  
C;Superfamily: human heregulin; EGF homology; immunoglobulin homology  
C;Keywords: alternative splicing  
F;182-221/Domain: EGF homology <EGF>  
  
Query Match 27.9%; Score 234.5; DB 2; Length 645;  
Best Local Similarity 35.9%; Pred. No. 4.6e-14;  
Matches 46; Conservative 31; Mismatches 40; Indels 11; Gaps 3;  
  
QY 5 SATTTTPTSTSPKFTHTTSTERSSEHFPCRDKDLAYCLNDGECFVIETLTGSHKH-CR 63  
Db 157 SVSTEGANTSSS-----TSTTGTGTLVKAKEKTCFVNGGECFVKDLSNPSRYLCK 211  
  
QY 64 CKEGYQGVRCDOPLPKTDSILSDPNHLGIEFMESEVYQVLSISCIIFGIVIVGMFCA 123  
Db 212 CPNEFTGDRCONV-----MASFYKHLGIEFMEAEELYQKRVLTITGICIALLVVGIMCV 266  
  
QY 124 AFTFKSKR 131  
Db 267 VAYCKTKK 274  
  
RESULT 3  
A45769  
acetylcholine receptor synthesis stimulator ARIA-1 precursor - chicken  
C;Species: Gallus gallus (chicken)  
C;Date: 20-Feb-1995 #sequence\_revision 20-Feb-1995 #text\_change 09-Jul-2004  
C;Accession: A45769  
R;Falls, D.L.; Rosen, K.M.; Corfas, G.; Lane, W.S.; Fischbach, G.D.  
Cell 72, 801-815, 1993  
A;Title: ARIA, a protein that stimulates acetylcholine receptor synthesis, is a member of  
A;Reference number: A45769; MUID:93201602; PMID:8453670  
A;Accession: A45769  
A;Status: preliminary  
A;Molecule type: mRNA; protein  
A;Residues: 1-602 <FAL>  
A;Cross-references: UNIPROT:Q05199; GB:L11264; NID:g212603; PIDN:AAA49037.1; PID:g212604  
A;Experimental source: brain  
C;Superfamily: human heregulin; EGF homology; immunoglobulin homology  
  
Query Match 26.7%; Score 224.5; DB 2; Length 602;  
Best Local Similarity 35.6%; Pred. No. 3.6e-13;  
Matches 47; Conservative 27; Mismatches 43; Indels 15; Gaps 3;  
  
QY 1 SSSSATTTTPTSTSPKFTHTTSTERSSEHFPCRDKDLAYCLNDGECFVIETLTGSHK 60  
Db 116 TKASVIITDNTAST-----STTGTSHLTKCDIKQKAFVNGGECYKVDLNPFR 166  
  
QY 61 H-CRCCKGYQGVRCDOPLPKTDSILSDPNHLGIEFMESEVYQVLSISCIIFGIVIVG 119  
Db 167 YLCRCPNFTGDRCONV-----MASFYKHLGIEFMEAEELYQKRVLTITGICIALLVG 221  
  
QY 120 MFCAAFYFKSKR 131  
Db 222 IMCWAYCKTKK 233  
  
RESULT 4  
I61719  
neu differentiation factor - rat  
C;Species: Rattus norvegicus (Norway rat)

C;Date: 29-May-1998 #sequence\_revision 29-May-1998 #text\_change 09-Jul-2004  
A;Accession: I61719; I61723; I61716; I61717; I61724; A38220  
R;Wen, D.; Suggs, S.V.; Karunakaran, D.; Liu, N.; Cupples, R.L.; Luo, Y.; Janssen, A.M.;  
Mol. Cell. Biol. 14, 1909-1919, 1994  
A;Title: Structural and functional aspects of the multiplicity of Neu differentiation factor  
A;Reference number: A56210; MUID:94158863; PMID:7509448  
A;Accession: I61719  
A;Status: preliminary; translated from GB/EMBL/DBJ  
A;Molecule type: mRNA  
A;Residues: 1-639 <RES>  
A;Cross-references: UNIPROT:P43322; EMBL:U02319; NID:g408388; PIDN:AAA19944.1; PID:g408389  
A;Accession: I61723  
A;Status: preliminary; translated from GB/EMBL/DBJ  
A;Molecule type: mRNA  
A;Residues: 1-639 <RE2>  
A;Cross-references: EMBL:U02323; NID:g408396; PIDN:AAA19948.1; PID:g408397  
A;Accession: I61716  
A;Status: preliminary; translated from GB/EMBL/DBJ  
A;Molecule type: mRNA  
A;Residues: 1-422, 'H', 'NL', 637-638, 'ELRRNKAYRSKMOIQLSATHLRPSSITHLGFIL' <RE3>  
A;Cross-references: EMBL:U02316; NID:g408382; PIDN:AAA19941.1; PID:g408383  
A;Accession: I61717  
A;Status: preliminary; translated from GB/EMBL/DBJ  
A;Molecule type: mRNA  
A;Residues: 1-422, 'H', 'NL', 637-638, 'ELRRNKAYRSKMOIQLSATHLRPSSITHLGFIL' <RE4>  
A;Cross-references: EMBL:U02317; NID:g408384; PIDN:AAA19942.1; PID:g408385  
A;Accession: I61724  
A;Status: preliminary; translated from GB/EMBL/DBJ  
A;Molecule type: mRNA  
A;Residues: 1-422 <RE5>  
A;Cross-references: EMBL:U02324; NID:g408398; PIDN:AAA19949.1; PID:g408399  
R;Wen, D.; Peles, E.; Cupples, R.; Suggs, S.V.; Bacus, S.S.; Luo, Y.; Trail, G.; Hu, S.;  
Cell 69, 559-572, 1992  
A;Title: Neu differentiation factor: a transmembrane glycoprotein containing an EGF domain  
A;Reference number: A38220; MUID:92257596; PMID:1349853  
A;Accession: A38220  
A;Status: preliminary  
A;Molecule type: mRNA  
A;Residues: 1-422 <WEN>  
A;Note: sequence extracted from NCBI backbone (NCBIN:101767, NCBIP:101768)  
C;Superfamily: human heregulin; EGF homology; immunoglobulin homology  
  
Query Match 24.1%; Score 203; DB 2; Length 639;  
Best Local Similarity 29.1%; Pred. No. 3.9e-11;  
Matches 44; Conservative 37; Mismatches 50; Indels 20; Gaps 5;  
  
QY 5 SATTTTPTSTSPKFTHTTSTERSSEHFPCRDKDLAYCLNDGECFVIETLTGSHKH-CR 63  
Db 157 SVSTEGANTSSS-----TSTTGTGTLVKAKEKTCFVNGGECFVKDLSNPSRYLCK 211  
  
QY 64 CKEGYQGVRCDOPLPKTDSILSDPNHLGIEFMESEVYQVLSISCIIFGIVIVGMFCA 122  
Db 212 CQPGFTGARTENVP-----MKVQTQKAEELYQKRVLTITGICIALLVVGIMC 260  
  
QY 123 AAFYFKSKNITANSVSSEERWKGLPQSEPNL 153  
Db 261 VWAYCKTKK--RQKLHDLRLQSLRSERSNL 289  
  
RESULT 5  
I38404  
neu differentiation factor - human  
C;Species: Homo sapiens (man)  
C;Date: 29-May-1998 #sequence\_revision 29-May-1998 #text\_change 09-Jul-2004  
C;Accession: I38404  
R;Wen, D.; Suggs, S.V.; Karunakaran, D.; Liu, N.; Cupples, R.L.; Luo, Y.; Janssen, A.M.;  
Mol. Cell. Biol. 14, 1909-1919, 1994  
A;Title: Structural and functional aspects of the multiplicity of Neu differentiation factor  
A;Reference number: A56210; MUID:94158863; PMID:7509448  
A;Accession: I38404  
A;Status: preliminary; translated from GB/EMBL/DBJ  
A;Molecule type: mRNA  
A;Residues: 1-462 <RES>

A;Cross-references: UNIPROT:Q02297; EMBL:U02326; NID:g408402; PIDN:AAA19951.1; PID:g4084  
C;Superfamily: human heregulin; EGF homology; immunoglobulin homology

Query Match 23.9%; Score 201; DB 2; Length 462;  
Best Local Similarity 31.0%; Pred. No. 4.2e-11;  
Matches 40; Conservative 34; Mismatches 37; Indels 18; Gaps 4;

Qy 5 SATTTPTSTSPKPHHTTYSERSEHPKCRDKLAYCLNDGECFVIETLTGSHKH-CR 63  
Db 157 SVSTEGANTSSS-----TSTSTTGTSHLVKCAEKEKTCVNGGECFVWKDLSNFSRYLCK 211  
Qy 64 CKEGVQGVRCQDFLPKTDLSILSDPNHLGIEFME--SEEVYQROVLISICIIFGIVTGMFC 122  
Db 212 CQPGFTGARCTENVP-----MKVQNKAEELYQKRVLTITGICIALLVVGIMC 260  
Qy 123 AAFYFKSKR 131  
Db 261 VVAYCKTKK 269

RESULT 6  
A43273  
heregulin precursor, splice form alpha - human  
N:Alternate names: breast cancer cell differentiation factor p45; Neu differentiation fa  
C:Species: Homo sapiens (man)  
C;Date: 31-Dec-1993 #sequence revision 31-Dec-1993 #text\_change 08-Sep-2002  
C;Accession: A43273; A48498; A38155  
R;Holmes, W.E.; Sliwkowski, M.X.; Akita, R.W.; Henzel, W.J.; Lee, J.; Park, J.W.; Yansu  
Science 256, 1205-1210, 1992  
A;Title: Identification of heregulin, a specific activator of p185(erbB2).  
A;Reference number: A43273; MUID:92271253; PMID:1350381  
A;Accession: A43273  
A;Status: nucleic acid sequence not shown; not compared with conceptual translation  
A;Molecule type: mRNA  
A;Residues: 1-640 <HOI>  
A;Experimental source: breast tumor cell line, MDA-MB-231, ATCC HTB 26  
A;Note: sequence extracted from NCBI backbone (NCBIP:103250)  
R;Culoucouc, J.M.; Plowman, G.D.; Carroll, G.W.; Green, J.M.; Shoyab, M.  
J. Biol. Chem. 268, 18407-18410, 1993  
A;Title: Characterization of a breast cancer cell differentiation factor that specifical  
A;Reference number: A48498; MUID:93366731; PMID:7689552  
A;Accession: A48498  
A;Molecule type: protein  
A;Residues: 20-21,'X',23-24,'XX',27-28 <CUL>  
R;Pelles, E.; Bacus, S.S.; Koski, R.A.; Lu, H.S.; Wen, D.; Ogden, S.G.; Levy, R.B.; Yarde  
Cell 69, 205-216, 1992  
A;Title: Isolation of the neu/HER-2 stimulatory ligand: a 44 kd glycoprotein that induce  
A;Reference number: A38155; MUID:92208945; PMID:1348215  
A;Accession: A38155  
A;Molecule type: protein  
A;Residues: 'X',15-16,'X',18-20,'RG',23-24,'GP',27,'E',29,'XP',32-36 <PEL>  
C;Genetics:  
A;Gene: GDB:HGL  
A;Cross-references: GDB:132656; OMTM:142445  
A;Map position: 8p22-8p11  
C;Superfamily: human heregulin; EGF homology; immunoglobulin homology  
C;Keywords: alternative splicing; glycoprotein  
F;182-221/Domain: EGF homology <EG>

Query Match 23.9%; Score 201; DB 2; Length 640;  
Best Local Similarity 31.0%; Pred. No. 6.1e-11;  
Matches 40; Conservative 34; Mismatches 37; Indels 18; Gaps 4;

Qy 5 SATTTPTSTSPKPHHTTYSERSEHPKCRDKLAYCLNDGECFVIETLTGSHKH-CR 63  
Db 157 SVSTEGANTSSS-----TSTSTTGTSHLVKCAEKEKTCVNGGECFVWKDLSNFSRYLCK 211  
Qy 64 CKEGVQGVRCQDFLPKTDLSILSDPNHLGIEFME--SEEVYQROVLISICIIFGIVTGMFC 122  
Db 212 CQPGFTGARCTENVP-----MKVQNKAEELYQKRVLTITGICIALLVVGIMC 260  
Qy 123 AAFYFKSKR 131

Db 261 VVAYCKTKK 269

RESULT 7  
JC5701  
Erbb kinase activator alpha, brain and thymus - rat  
C;Species: Rattus norvegicus (Norway rat)  
C;Date: 25-Nov-1997 #sequence\_revision 25-Nov-1997 #text\_change 09-Jul-2004  
C;Accession: JC5701; PC4411  
R;Higashiyama, S.; Horikawa, M.; Yamada, K.; Ichino, N.; Nakano, N.; Nakagawa, T.; Miyag  
J. Biochem. 122, 675-680, 1997  
A;Title: A novel brain-derived member of the epidermal growth factor family that interac  
A;Reference number: JC5700; MUID:98006324; PMID:9348101  
A;Accession: JC5701  
A;Molecule type: mRNA  
A;Residues: 1-868 <HIG>  
A;Cross-references: UNIPROT:O35569; DDBJ:D89995; NID:g2605629; PIDN:BAA23344.1; PID:g260  
A;Accession: PC4411  
A;Molecule type: protein  
A;Residues: 128-162 <HI2>  
A;Experimental source: PC-12 cell  
C;Comment: This protein is a member of the epidermal growth factor family. It is functio  
ating the differentiation of MDA-MB-453 cells.  
C;Superfamily: human Erbb kinase activator alpha, brain and thymus; EGF homology; immun  
F;361-397/Domain: EGF homology <EGF>

Query Match 23.6%; Score 199; DB 2; Length 868;  
Best Local Similarity 35.3%; Pred. No. 1.3e-10;  
Matches 42; Conservative 25; Mismatches 44; Indels 8; Gaps 4;

Qy 18 KPHHTTYSERSE---HFKPCRDKLAYCLNDGECFVIETLTGSHKHCRKEGVQGVRC 74  
Db 341 RLHVNSVSTTSSWSGSHARKNETAKSYCVNGGVYIEGI--NQLSKCPNGFQGRCL 398  
Qy 75 QFLPKTDSILSDP--NHLGIEFMESEEVYQROVLISICIIFGIVTGMFCAPYFKSKR 131  
Db 399 EKLP-LRLYMPDPKQKHLGELKAEELYQKRVLTITGICVALLWGVVAVYCKTKK 456

RESULT 8  
161718  
neu differentiation factor - rat  
C;Species: Rattus norvegicus (Norway rat)  
C;Date: 29-May-1998 #sequence\_revision 29-May-1998 #text\_change 09-Jul-2004  
C;Accession: 161718; 161721; I61720  
R;Wen, D.; Suggs, S.V.; Karunakaran, D.; Liu, N.; Cupples, R.L.; Luo, Y.; Janaseen, A.M.;  
Mol. Cell. Biol. 14, 1909-1919, 1994  
A;Title: Structural and functional aspects of the multiplicity of Neu differentiation fa  
A;Reference number: A56210; MUID:94158863; PMID:7509448  
A;Accession: 161718  
A;Status: preliminary; translated from GB/EMBL/DDBJ  
A;Molecule type: mRNA  
A;Residues: 1-636 <RES>  
A;Cross-references: UNIPROT:P43322; EMBL:U02318; NID:g408386; PIDN:AAA19943.1; PID:g4083  
A;Accession: 161721  
A;Status: preliminary; translated from GB/EMBL/DDBJ  
A;Molecule type: mRNA  
A;Residues: 1-444,'A',446-636 <RE2>  
A;Cross-references: EMBL:U02321; NID:g408392; PIDN:AAA19946.1; PID:g408393  
A;Accession: 161720  
A;Status: preliminary; translated from GB/EMBL/DDBJ  
A;Molecule type: mRNA  
A;Residues: 1-298,386,'V',388,'TR',391 <RE3>  
A;Cross-references: EMBL:U02320; NID:g408390; PIDN:AAA19945.1; PID:g408391  
C;Superfamily: human heregulin; EGF homology; immunoglobulin homology  
F;182-221/Domain: EGF homology <EGF>

Query Match 23.5%; Score 197.5; DB 2; Length 636;  
Best Local Similarity 28.7%; Pred. No. 1.3e-10;  
Matches 43; Conservative 34; Mismatches 52; Indels 21; Gaps 4;

Qy 5 SATTTPTSTSPKPHHTTYSERSEHPKCRDKLAYCLNDGECFVIETLTGSHKH-CR 63

Db 157 SVSTEGANTSSS-----TSTSTTGTSHLKAKEKTCFVNGGRCFTVKOLNSPSRYLCK 211  
Qy 64 CKEGYQGVRCDOQLPKTDLSILSDPNHLGIFEMSEEEVYQROVLSISCIIFGIVLGMFCA 123  
Db 212 CPNEFTGDRCO-----NYWNASFYKAEELYQKRVLITGICIALLVGIMCV 258  
Qy 124 AFYFKSRKNITANSVSEERWKGLPSQEPNL 153  
Db 259 VAYCKTKKQ--RQKLHDLRLQSLRSERSNL 286  
RESULT 9  
C43273  
herregulin precursor, splice form beta-2 - human  
C;Species: Homo sapiens (man)  
C;Date: 31-Dec-1993 #sequence\_revision 31-Dec-1993 #text\_change 08-Sep-2002  
C;Accession: C43273; I38407  
R;Holmes, W.E.; Sliwkowski, M.X.; Akita, R.W.; Henzel, W.J.; Lee, J.; Park, J.W.; Yansun  
Science 256, 1205-1210, 1992  
A;Title: Identification of herregulin, a specific activator of p185(erbB2).  
A;Reference number: A43273; MUID:92271253; PMID:1350381  
A;Accession: C43273  
A;Status: preliminary; nucleic acid sequence not shown; not compared with conceptual tra  
A;Molecule type: mRNA  
A;Residues: 1-637 <HOL>  
R;Wen, D.; Suggs, S.V.; Karunakaran, D.; Liu, N.; Cupples, R.L.; Luo, Y.; Janssen, A.M.;  
Mol. Cell. Biol. 14, 1909-1919, 1994  
A;Title: Structural and functional aspects of the multiplicity of Neu differentiation fa  
A;Reference number: A56210; MUID:94158863; PMID:7509448  
A;Accession: I38407  
A;Status: preliminary; translated from GB/EMBL/DBJ  
A;Molecule type: mRNA  
A;Residues: 119-406 <RES>  
A;Cross-references: EMBL:U02329; NID:g408408; PIDN:AAAL19954.1; PID:g408409  
C;Genetics:  
A;Gene: GDB:HGL  
A;Cross-references: GDB:I32656; OMIM:142445  
A;Map position: 8p22-8p11  
C;Superfamily: human heregulin; EGF homology; immunoglobulin homology  
C;Keywords: alternative splicing  
F;182-221/Domain: EGF homology <EGF>  
Query Match 23.3%; Score 196.5; DB 2; Length 637;  
Best Local Similarity 30.5%; Pred. No. 1.6e-10;  
Matches 39; Conservative 31; Mismatches 39; Indels 19; Gaps 3;  
Qy 5 SATTTPTSTSPKFTTSTYSTERSEHPKPCRDKLAYCLNDGECFVIELTSGSHK-CR 63  
Db 157 SVSTEGANTSSS-----TSTSTTGTSHLVKCAKEKTCFVNGGSCFMVKOLNSPSRYLCK 211  
Qy 64 CKEGYQGVRCDOQLPKTDLSILSDPNHLGIFEMSEEEVYQROVLSISCIIFGIVLGMFCA 123  
Db 212 CPNEFTGDRCO-----NYWNASFYKAEELYQKRVLITGICIALLVGIMCV 258  
Qy 124 AFYFKSKR 131  
Db 259 VAYCKTKK 266  
RESULT 10  
I38403  
neu differentiation factor - human (fragment)  
C;Species: Homo sapiens (man)  
C;Date: 29-May-1998 #sequence\_revision 29-May-1998 #text\_change 08-Sep-2002  
C;Accession: I38403  
R;Wen, D.; Suggs, S.V.; Karunakaran, D.; Liu, N.; Cupples, R.L.; Luo, Y.; Janssen, A.M.;  
Mol. Cell. Biol. 14, 1909-1919, 1994  
A;Title: Structural and functional aspects of the multiplicity of Neu differentiation fa  
A;Reference number: A56210; MUID:94158863; PMID:7509448  
A;Accession: I38403  
A;Status: preliminary; translated from GB/EMBL/DBJ  
A;Molecule type: mRNA

A;Residues: 1-350 <RES>  
A;Cross-references: EMBL:U02325; NID:g408400; PIDN:AAAL19950.1; PID:g408401  
C;Superfamily: human heregulin; EGF homology; immunoglobulin homology  
Query Match 22.7%; Score 191.5; DB 2; Length 350;  
Best Local Similarity 38.4%; Pred. No. 2.4e-10;  
Matches 33; Conservative 26; Mismatches 24; Indels 3; Gaps 2;  
Qy 47 GECFVIETLTGSHKH-CRCCKEGYQGVRCDOFLPKTDLSILSDPNHLGIFEMSEEEVYQROV 105  
Db 1 GECFMVKOLNSPSRYLCKQPGFTGARTENVPM--KVQNQERKHLGIEFIEAEELYQKRV 58  
Qy 106 LSTSCIIFGIVVGMFCAAPFYFKSKR 131  
Db 59 LITGICIALLVGIMCVWAYCKTKK 84  
RESULT 11  
I61722  
neu differentiation factor - rat  
C;Species: Rattus norvegicus (Norway rat)  
C;Date: 29-May-1998 #sequence\_revision 29-May-1998 #text\_change 09-Jul-2004  
C;Accession: I61722  
R;Wen, D.; Suggs, S.V.; Karunakaran, D.; Liu, N.; Cupples, R.L.; Luo, Y.; Janssen, A.M.;  
Mol. Cell. Biol. 14, 1909-1919, 1994  
A;Title: Structural and functional aspects of the multiplicity of Neu differentiation fa  
A;Reference number: A56210; MUID:94158863; PMID:7509448  
A;Accession: I61722  
A;Status: preliminary; translated from GB/EMBL/DBJ  
A;Molecule type: mRNA  
A;Residues: 1-662 <RES>  
A;Cross-references: UNIPROT:P43322; EMBL:U02322; NID:g408394; PIDN:AAAL19947.1; PID:g4083;  
C;Superfamily: human heregulin; EGF homology; immunoglobulin homology  
F;182-221/Domain: EGF homology <EGF>  
Query Match 22.5%; Score 189.5; DB 2; Length 662;  
Best Local Similarity 27.0%; Pred. No. 7.5e-10;  
Matches 44; Conservative 39; Mismatches 59; Indels 21; Gaps 5;  
Qy 5 SATTTPTSTSPKFTTSTYSTERSEHPKPCRDKLAYCLNDGECFVIELTSGSHK-CR 63  
Db 157 SVSTEGANTSSS-----TSTSTTGTSHLIKCAKEKTCFVNGGECFTVKOLNSPSRYLCK 211  
Qy 64 CKEGYQGVRCDOQL-----PKTDSILSDP-NHLGIFEMSEEEVYQROVLSISC 110  
Db 212 CPNEFTGDRCONYVMASFYMTSRKRQETEKPLERKLDHSLVKESKAEELYQKRVLITG 271  
Qy 111 IIFGIVVGMFCAAPFYFKSKRNITANSVSEERWKGLPSQEPNL 153  
Db 272 ICIALLVGMIMCVVAYCKTKKQ--RQKLHDLRLQSLRSERSNL 312  
RESULT 12  
JCS702  
ErBb kinase activator alpha2a, brain and thymus - rat  
C;Species: Rattus norvegicus (Norway rat)  
C;Date: 25-Nov-1997 #sequence\_revision 25-Nov-1997 #text\_change 09-Jul-2004  
C;Accession: JCS702; PC4417  
R;Higashiyama, S.; Horikawa, M.; Yamada, K.; Ichino, N.; Nakano, N.; Nakagawa, T.; Miyag;  
J. Biochem. 122, 675-680, 1997  
A;Title: A novel brain-derived member of the epidermal growth factor family that interaci  
A;Reference number: JCS700; MUID:98006324; PMID:9348101  
A;Accession: JCS702  
A;Status: nucleic acid sequence not shown  
A;Molecule type: mRNA  
A;Residues: 1-860 <HIG>  
A;Cross-references: UNIPROT:O35559; DDBJ:D89996; NID:g2605631; PIDN:BAA23345.1; PID:g260;  
A;Experimental source: PC-12 cell  
A;Accession: PC4417  
A;Status: nucleic acid sequence not shown  
A;Molecule type: mRNA  
A;Residues: F', 212-213, 223-860 <HIG>  
A;Cross-references: DDBJ:AB001576; NID:g2605478; PIDN:BAA23348.1; PID:g2605479

A:Experimental source: PC-12 cell  
C:Comment: This protein is a member of the epidermal growth factor family. It is functional in the differentiation of MDA-MB-453 cells.  
C:Superfamily: human ErbB kinase activator alpha, brain and thymus; EGF homology; immunoglobulin-like domain; EGF homology <EGF>  
C:Keywords: glycoprotein  
F:274-327/Domain: Ig-like #status predicted <IGL>  
F:361-397/Domain: EGF homology <EGF>  
F:422-444/Domain: hydrophobic #status predicted <HVD>  
F:163,294,467/Binding site: carbohydrate (Asn) (covalent) #status predicted

Query Match 20.3%; Score 171; DB 2; Length 860;  
Best Local Similarity 31.6%; Pred. No. 5.3e-08;  
Matches 37; Conservative 26; Mismatches 42; Indels 12; Gaps 4;

Qy 18 KFTVTYSTERSE---HFKPCRDLDAYCLNDGSCFVETLTGSHKCRKEGVGVRCDD 74  
Db 341 RLHVNSVSTLTSSWSGARKNETAKSYCVNGVGYIEGI--NQLSKCPNGFGQRCCL 398

Qy 75 QPLKPTDILSDPNHGLTFEFSVQVQVLTSLIFGIVGVGMFCAPFYFKSKR 131  
Db 399 EKLP-LRLYMPDPK-----QKABELYQKRVLTITGICVALLVGVVCAVYCKTKX 448

RESULT 13  
JC5700  
ErbB kinase activator alpha, brain and thymus - human  
C:Species: Homo sapiens (man)  
C:Date: 25-Nov-1997 #sequence\_revision 25-Nov-1997 #text\_change 09-Jul-2004  
C:Accession: JC5700  
R:Higaehiyama S.; Horikawa, M.; Yamada, K.; Ichino, N.; Nakano, N.; Nakagawa, T.; Miyagawa, J. Biochem. 122, 675-680, 1997  
A:Title: A novel brain-derived member of the epidermal growth factor family that interacts with the epidermal growth factor receptor  
A:Reference number: JC5700; MUID:98006324; PMID:9348101  
A:Accession: JC5700  
A:Status: nucleic acid sequence not shown  
A:Molecule type: mRNA  
A:Residues: 1-850 <HIG>  
A:Cross-references: UNIPROT:O14511; DBJ:AB005060; NID:92626738; PIDN:BA23417.1; PID:92626738  
A:Experimental source: SK-NH cell  
C:Comment: This protein is a member of the epidermal growth factor family. It is functional in the differentiation of MDA-MB-453 cells.  
C:Superfamily: human ErbB kinase activator alpha, brain and thymus; EGF homology; immunoglobulin-like domain; EGF homology <EGF>  
C:Keywords: glycoprotein  
F:258-311/Domain: Ig-like #status predicted <IGL>  
F:345-381/Domain: EGF homology <EGF>  
F:346-381/Domain: EGF-like #status predicted <EGF2>  
F:147,278,451/Binding site: carbohydrate (Asn) (covalent) #status predicted

Query Match 19.7%; Score 166; DB 2; Length 850;  
Best Local Similarity 33.3%; Pred. No. 1.5e-07;  
Matches 37; Conservative 26; Mismatches 38; Indels 10; Gaps 4;

Qy 21 TTTVTYSTERSEHFKPCRDLDAYCLNDGSCFVETLTGSHKCRKEGVGVRCDDFLPKT 80  
Db 332 STLTSS-WSGARKNETAKSYCVNGVGYIEGI--NQLSKCPNGFGQRCLEKLP-L 387

Qy 81 DSILSDPNHGLTFEFSVQVQVLTSLIFGIVGVGMFCAPFYFKSKR 131  
Db 388 RLNPDPK-----QKABELYQKRVLTITGICVALLVGVVCAVYCKTKX 432

RESULT 14  
A56943  
sensory/motor neuron-derived factor - human  
C:Species: Homo sapiens (man)  
C:Date: 18-Aug-1995 #sequence\_revision 18-Aug-1995 #text\_change 09-Jul-2004  
C:Accession: A56943  
R:Ho, W.H.; Armanini, M.P.; Nuijens, A.; Phillips, H.S.; Osheeroff, P.L.  
J. Biol. Chem. 270, 14523-14532, 1995  
A:Title: Sensory and motor neuron-derived factor. A novel heregulin variant highly expressed in sensory neurons  
A:Reference number: A56943; MUID:95301541; PMID:7782315  
A:Accession: A56943  
A:Status: preliminary; not compared with conceptual translation

A:Molecule type: mRNA  
A:Residues: 1-296 <HOA>  
A:Cross-references: UNIPROT:Q15491; GB:I41827; NID:9862422; PIDN:AAC41764.1; PID:9862422  
C:Superfamily: human heregulin; EGF homology; immunoglobulin homology  
F:237-276/Domain: EGF homology <EGF>

Query Match 16.6%; Score 140; DB 2; Length 296;  
Best Local Similarity 32.5%; Pred. No. 1.3e-05;  
Matches 25; Conservative 19; Mismatches 31; Indels 2; Gaps 2;

Qy 2 SSSATTTTPTSTSPKFTTSTYSTERSEHFKPCRDLDAYCLNDGSCFVETLTGSHKH 61  
Db 205 SATQPTTETNLQAPKLSTST-STTGTSHLVKCAEKETFCVNGGECFVWKDLSNPSRY 263

Qy 62 -CRCKEGYQGVRCDDQL 77  
Db 264 LCKCPNEFTGDRCONV 280

RESULT 15  
I38405  
neu differentiation factor - human (fragment)  
C:Species: Homo sapiens (man)  
C:Date: 29-May-1998 #sequence\_revision 29-May-1998 #text\_change 08-Sep-2002  
C:Accession: I38405  
R:Wen, D.; Suggs, S.V.; Karunakaran, D.; Liu, N.; Cupples, R.L.; Luo, Y.; Janseen, A.M.; Mol. Cell. Biol. 14, 1909-1919, 1994  
A:Title: Structural and functional aspects of the multiplicity of Neu differentiation factor  
A:Reference number: A56210; MUID:94158863; PMID:7509448  
A:Accession: I38405  
A:Status: preliminary; translated from GB/EMBL/DBJ  
A:Molecule type: mRNA  
A:Residues: 1-125 <RES>  
A:Cross-references: EMBL:U02327; NID:9408404; PIDN:AAA19952.1; PID:9408405  
C:Superfamily: human heregulin; EGF homology; immunoglobulin homology

Query Match 16.3%; Score 137; DB 2; Length 125;  
Best Local Similarity 33.3%; Pred. No. 9.6e-06;  
Matches 25; Conservative 19; Mismatches 25; Indels 6; Gaps 2;

Qy 5 SATTTTPTSTSPKFTTSTYSTERSEHFKPCRDLDAYCLNDGSCFVETLTGSHKH-CR 63  
Db 35 SVSTEGANTSSS-----TSSTTGTSHLVKCAEKETFCVNGGECFVWKDLSNPSRYLCK 89

Qy 64 CKEGYQGVRCDDQLP 78  
Db 90 CQPGFTGARTENVP 104

Search completed: July 13, 2005, 20:28:39  
Job time : 39 secs

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GenCore version 5.1.6  
Copyright (c) 1993 - 2005 Compugen Ltd.

OM protein - protein search, using sw model

Run on: July 13, 2005, 20:17:46 ; Search time 174 Seconds  
(without alignments)  
462.048 Million cell updates/sec

Title: US-10-609-370-2

Perfect score: 842

Sequence: 1 SSSSATTTPETSTSPKFH.....VSEERWKGLEPQNLOQDK 157

Scoring table:

BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 1612378 seqs, 512079187 residues

Total number of hits satisfying chosen parameters: 1612378

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

UniProt\_03.\*

1: uniprot\_sprot.\*

2: uniprot\_trembl.\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

#### SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	689.5	81.9	720	1 NRG3_HUMAN	P56975 homo sapien
2	674.5	80.1	713	1 NRG3_MOUSE	O35181 mus musculus
3	251.5	29.9	700	2 Q9ESB1	Q9esb1 rattus norv
4	249.5	29.6	700	2 Q6DR99	Q6dr99 mus musculus
5	235.5	28.0	782	2 Q9ESA5	Q9esa5 rattus norv
6	234.5	27.9	645	2 Q7RTW4	Q7rtw4 homo sapien
7	233.5	27.7	645	2 Q6DR98	Q6dr98 mus musculus
8	233.5	26.7	677	1 NRG1_XENLA	O93383 xenopus lae
9	224.5	26.7	602	1 NRG1_CHICK	O05199 gallus gall
10	219	26.0	298	2 Q9ESJ9	Q9esj9 rattus norv
11	219	26.0	695	2 Q9ESB0	Q9esb0 rattus norv
12	208	24.7	756	1 NRG2_MOUSE	P56974 mus musculus
13	203	24.1	461	2 Q35947	O35947 mesocricetu
14	201	23.9	394	2 Q6TGK9	Q6tgk9 oryctolagus
15	201	23.9	462	2 Q7RTW1	Q7rtw1 homo sapien
16	201	23.9	639	1 NRG1_HUMAN	O02297 h pro-neure
17	201	23.9	640	2 Q7RTV8	Q7rtv8 homo sapien
18	199	23.6	868	1 NRG2_RAT	O35569 rattus norv
19	196.5	23.3	637	2 Q7RTW3	Q7rtw3 homo sapien
20	189.5	22.5	662	1 NRG1_RAT	P43322 r pro-neure
21	166	19.7	850	1 NRG2_HUMAN	O14511 homo sapien
22	156	18.5	76	2 Q810X0	Q810x0 mus musculus
23	143.5	17.0	111	2 Q9ESAB	Q9esab rattus norv
24	140	16.6	296	1 SMDP_HUMAN	Q15491 homo sapien
25	140	16.6	296	2 Q96IE3	Q96ib3 homo sapien
26	140	16.6	296	2 Q6ICV5	Q6icv5 homo sapien
27	140	16.6	296	2 Q7RTW2	Q7rtw2 homo sapien
28	138	16.4	296	2 Q8BX76	Q8bx76 mus musculus
29	137	16.3	136	2 Q9ESAT	Q9esat rattus norv
30	137	16.3	256	2 Q9ESA6	Q9esa6 rattus norv
31	129	15.3	115	1 NRG4_MOUSE	Q9wtx4 mus musculus

32	128	15.2	241	2	Q07112	Q07112 bos taurus
33	127	15.1	115	1	NRG4_HUMAN	Q8wgl1 homo sapien
34	124.5	14.8	422	2	Q7RTV9	Q7rtv9 homo sapien
35	123.5	14.7	234	1	SPIT_DROME	Q01083 drosophila
36	123.5	14.7	317	2	Q9ESA3	Q9esa3 rattus norv
37	123	14.6	241	2	Q6PK61	Q6pk61 homo sapien
38	123	14.6	241	2	Q7RTW0	Q7rtw0 homo sapien
39	121	14.4	323	2	Q9ESA2	Q9esa2 rattus norv
40	121	14.4	342	2	Q9ESA1	Q9esa1 rattus norv
41	118.5	14.1	1114	2	Q6VQA2	Q6vqa2 brachydanio
42	115	13.7	169	1	EREG_HUMAN	O14944 homo sapien
43	113.5	13.5	162	2	Q9Z0L5	Q9z0l5 rattus norv
44	112	13.3	177	2	Q9JMA4	Q9jma4 rattus norv
45	111	13.2	177	1	ETC_MOUSE	Q05928 mus musculus

#### ALIGNMENTS

RESULT 1  
NRG3\_HUMAN  
ID NRG3\_HUMAN STANDARD; PRT; 720 AA.  
AC P56975;  
DT 16-OCT-2001 (Rel. 40, Created)  
DT 16-OCT-2001 (Rel. 40, Last sequence update)  
DT 05-JUL-2004 (Rel. 44, Last annotation update)  
DE Pro-neuregulin-3 precursor (Pro-NRG3) [Contains: Neuregulin-3 (NRG-3)].  
DB NCBI\_TaxID=9606;  
GN Name=NRG3;  
OS Homo sapiens (Human).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.  
OX NCBI\_TaxID=9606;  
RN [1]  
RP SEQUENCE FROM N.A.  
RX TISSUE=Fetal brain;  
RX MEDLINE=9740720; PubMed=9275162; DOI=10.1073/pnas.94.18.9562;  
RA Zhang D., Sliwkowski M.X., Mark M., Frantz G., Akita R., Sun Y., Hillan K., Crowley C., Brush J., Godowski P.J.;  
RT "Neuregulin-3 (NRG3): a novel neural tissue-enriched protein that binds and activates ErbB4.";  
RL Proc. Natl. Acad. Sci. U.S.A. 94:9562-9567(1997).

CC -I- FUNCTION: Direct ligand for the ERBB4 tyrosine kinase receptor. Binding results in ligand-stimulated tyrosine phosphorylation and activation of the receptor. Does not bind to the EGF receptor, ERBB2 or ERBB3 receptors.  
CC -I- SUBCELLULAR LOCATION: Exists as an type I membrane protein and as a proteolytically released soluble growth factor form. The membrane-bound form does not seem to be active (by similarity).  
CC -I- TISSUE SPECIFICITY: Highly expressed in most regions of the brain with the exception of corpus callosum. Expressed at lower level in testis. Not detected in heart, placenta, lung, liver, skeletal muscle, kidney, pancreas, spleen, thymus, prostate, ovary, small intestine, colon and peripheral blood leukocytes.  
CC -I- DOMAIN: The cytoplasmic domain may be involved in the regulation of trafficking and proteolytic processing. Regulation of the proteolytic processing involves initial intracellular domain dimerization (by similarity).  
CC -I- DOMAIN: ERBB receptor binding is elicited entirely by the EGF-like domain (by similarity).  
CC -I- PTM: Proteolytic cleavage close to the plasma membrane on the external face leads to the release of the soluble growth factor form (by similarity).  
CC -I- PTM: Extensive glycosylation precedes the proteolytic cleavage (by similarity).  
CC -I- SIMILARITY: Belongs to the neuregulin family.  
CC -I- SIMILARITY: Contains 1 EGF-like domain.  
DR HSSP; P01133; 1JL9.  
DR Genew; HGNC:7999; NRG3.  
DR MIM; 605533; --  
DR GO; GO:0005576; C:extracellular; NAS.  
DR GO; GO:0005887; C:integral to plasma membrane; NAS.  
DR GO; GO:0008083; F:growth factor activity; NAS.

DR GO: 0030297; F:transmembrane receptor protein tyrosine kin. . .; NAS.  
 DR GO: 0001158; P:regulation of cell growth; NAS.  
 DR GO: 0007170; P:transmembrane receptor protein tyrosine kin. . .; NAS.  
 DR InterPro: IPR000742; EGF\_2.  
 DR InterPro: IPR008209; EGF-like.  
 DR InterPro: IPR006210; IEGF.  
 DR InterPro: IPR002154; Neuregulin.  
 DR Pfam: PF00008; EGF; 1.  
 DR Pfam: PF02158; Neuregulin; 1.  
 DR SMART: SM00181; EGF; 1.  
 DR PROSITE: PS00022; EGF\_1; 1.  
 DR PROSITE: PS01186; EGF\_2; 1.  
 DR PROSITE: PS00026; EGF\_3; 1.  
 KW EGF-like domain; Growth factor; Multigene family; Transmembrane.  
 FT CHAIN 1 720 Pro-neuregulin-3, membrane-bound form.  
 FT CHAIN 1 359 Neuregulin-3.  
 FT DOMAIN 1 360 Extracellular (Potential).  
 FT TRANSMEM 361 381 Internal signal sequence (Potential).  
 FT DOMAIN 382 720 Cytoplasmic (Potential).  
 FT DOMAIN 105 285 Ser/Thr-rich.  
 FT DOMAIN 286 329 EGF-like.  
 FT DOMAIN 5 8 Poly-Ala.  
 FT DOMAIN 13 21 Poly-Ala.  
 FT DOMAIN 26 34 Poly-Ala.  
 FT DOMAIN 127 135 Poly-Thr.  
 FT DOMAIN 252 260 Poly-Ser.  
 FT DOMAIN 262 265 Poly-Thr.  
 FT DISULFID 290 304 By similarity.  
 FT DISULFID 298 317 By similarity.  
 FT DISULFID 319 328 By similarity.  
 SQ SEQUENCE 720 AA; 77900 MW; A4D6F10DB95A693 CRC64;  
 Query Match 81.9%; Score 689.5; DB 1; Length 720;  
 Best Local Similarity 92.3%; Pred. No. 2.4e-59;  
 Matches 131; Conservative 4; Mismatches 5; Indels 3; Gaps 2;  
 Qy 1 SSSSAITTTTPTSTSPKFTTTTSTERSHFKPCRDKDLAYCLNDGECFVIETLTGSHK 60  
 Db 256 SSSSAITTTTPTSTSPKFTTTTSTERSHFKPCRDKDLAYCLNDGECFVIETLTGSHK 315  
 Qy 61 HCCKEYQGVRCDFLPKTDLSLSDP-NHLGTFEFSSEVYQYQVLSICIIIFGIVG 119  
 Db 316 HCCKEYQGVRCDFLPKTDLSLSDP-TDHLGTFEFSSEVYQYQVLSICIIIFGIVG 375  
 Qy 120 MFCAAFYFKSKRNTANSVSEE 141  
 Db 376 MFCAAFYFKSKQ--AKIQEQ 395  
 RESULT 2  
 NR3 MOUSE STANDARD; PRT; 713 AA.  
 ID NR3\_MOUSE  
 AC Q35181;  
 DT 16-OCT-2001 (Rel. 40, Created)  
 DT 16-OCT-2001 (Rel. 40, Last sequence update)  
 DT 05-JUL-2004 (Rel. 44, Last annotation update)  
 DE Pro-neuregulin-3 precursor (Pro-NRG3) [Contains: Neuregulin-3 (NRG-3)].  
 DE Name=Nrg3;  
 GN Mus musculus (Mouse).  
 OS Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.  
 OX NCBI\_TaxID=10090;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RC TISSUE=Brain;  
 RX MEDLINE=97420720; PubMed=9275162; DOI=10.1073/pnas.94.18.9562;  
 RA Zhang D., Sliwkowski M.X., Mark M., Frantz G., Akita R., Sun Y.,  
 RA Hillan K., Crowley C., Brush J., Godowski P.J.;  
 RT "Neuregulin-3 (NRG3): a novel neural tissue-enriched protein that  
 RT binds and activates ErbB4.";  
 RL Proc. Natl. Acad. Sci. U.S.A. 94:9562-9567 (1997).  
 CC -!- FUNCTION: Direct ligand for the ERBB4 tyrosine kinase receptor.

CC Binding results in ligand-stimulated tyrosine phosphorylation and activation of the receptor. Does not bind to the EGF receptor, ERBB2 or ERBB3 receptors.  
 CC -!- SUBCELLULAR LOCATION: Exists as an type I membrane protein and as a proteolytically released soluble growth factor form. The membrane-bound form does not seem to be active (By similarity).  
 CC -!- TISSUE SPECIFICITY: Expressed in sympathetic, motor, and sensory neurons.  
 CC -!- DEVELOPMENTAL STAGE: Detected as early as 11 dpc. At 13 dpc detected mainly in the nervous system. At 16 dpc, detected in the brain, spinal cord, trigeminal, vestibular-cochlear, and spinal ganglia. In adults, expressed in spinal cord, and numerous brain regions.  
 CC -!- DOMAIN: The cytoplasmic domain may be involved in the regulation of trafficking and proteolytic processing. Regulation of the proteolytic processing involves initial intracellular domain dimerization (By similarity).  
 CC -!- DOMAIN: ERBB receptor binding is elicited entirely by the EGF-like domain (By similarity).  
 CC -!- PTM: Proteolytic cleavage close to the plasma membrane on the external face leads to the release of the soluble growth factor form (By similarity).  
 CC -!- PTM: Extensive glycosylation precedes the proteolytic cleavage (By similarity).  
 CC -!- SIMILARITY: Belongs to the neuregulin family.  
 CC -!- SIMILARITY: Contains 1 EGF-like domain.  
 CC This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See <http://www.isb-sib.ch/announce/> or send an email to [license@sib-sib.ch](mailto:license@sib-sib.ch)).  
 CC EMBL: AF010130; AAB70914.1; -.  
 DR PIR: T44447; T44447.  
 DR HSSP: P01133; 1JL9.  
 DR MGD: MGI:1097165; Nrg3.  
 DR GO: GO:0005515; F:protein binding; IPI.  
 DR GO: GO:0007243; P:protein kinase cascade; IDA.  
 DR InterPro: IPR000742; EGF\_2.  
 DR InterPro: IPR006209; EGF-like.  
 DR InterPro: IPR002154; Neuregulin.  
 DR Pfam: PF00008; EGF; 1.  
 DR Pfam: PF02158; Neuregulin; 1.  
 DR PROSITE: PS00022; EGF\_1; 1.  
 DR PROSITE: PS01186; EGF\_2; 1.  
 DR PROSITE: PS00026; EGF\_3; 1.  
 DR EGF-like domain; Growth factor; Multigene family; Transmembrane.  
 FT CHAIN 1 713 Pro-neuregulin-3, membrane-bound form.  
 FT CHAIN 1 361 Neuregulin-3.  
 FT DOMAIN 1 362 Extracellular (Potential).  
 FT TRANSMEM 363 383 Internal signal sequence (Potential).  
 FT DOMAIN 384 713 Cytoplasmic (Potential).  
 FT DOMAIN 105 287 Ser/Thr-rich.  
 FT DOMAIN 288 331 EGF-like.  
 FT DOMAIN 13 21 Poly-Ala.  
 FT DOMAIN 26 34 Poly-Ala.  
 FT DOMAIN 127 135 Poly-Thr.  
 FT DOMAIN 250 253 Poly-Ala.  
 FT DOMAIN 254 263 Poly-Ser.  
 FT DOMAIN 264 267 Poly-Thr.  
 FT DISULFID 292 306 By similarity.  
 FT DISULFID 300 319 By similarity.  
 FT DISULFID 321 330 By similarity.  
 SQ SEQUENCE 713 AA; 77369 MW; 9F7D1D5E7FC8DCFO CRC64;  
 Query Match 80.1%; Score 674.5; DB 1; Length 713;  
 Best Local Similarity 90.7%; Pred. No. 7.2e-58;  
 Matches 127; Conservative 6; Mismatches 4; Indels 3; Gaps 2;  
 Qy 2 SSSSAITTTTPTSTSPKFTTTTSTERSHFKPCRDKDLAYCLNDGECFVIETLTGSHK 61

```
Db 259 SSTSTSTSTSTSPKPHHTTSTSTERSEHPKCRDKDLAYCLNDGECFVETLTGSHKH 318
Qy 62 CRCKEGYQGVRCDFLPKTDLSILSDP-NHLGIEFMESEVYQRVLSISCIIFGIVIVGM 120
Db 319 CRCKEGYQGVRCDFLPKTDLSILSDP-DHLGIEFMESEVYQRVLSISCIIFGIVIVGM 378
Qy 121 FCAAFYFKSKNITANSVSE 140
Db 379 FCAAFYFKSKKQ--AKQIQE 396

RESULT 3
Q9ESB1 ID Q9ESB1 PRELIMINARY; PRT; 700 AA.
AC Q9ESB1;
DT 01-MAR-2001 (TrEMBLrel. 16, Created)
DT 01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
DT 01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE SWPf neuregulin beta 1a.
GN Name=Nrg1;
OS Rattus norvegicus (Rat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
OX NCBI_TaxID=10116;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=Sprague-Dawley;
RA Carroll S.L., Anderson K.D., Frohnert P.W.;
RA Submitted (OCT-1999) to the EMBL/GenBank/DBJ databases.
CC -1- SIMILARITY: Contains 1 EGF-like domain.
DR EMBL; AF194438; AAG28427.1; -.
DR HSSP; Q12780; 1HRE.
DR GO; GO:0005102; F:receptor binding; IEA.
DR GO; GO:0009790; P:embryonic development; IEA.
DR InterPro; IPR000742; EGF_2.
DR InterPro; IPR006209; EGF_like.
DR InterPro; IPR002114; HRP_Serp_S.
DR InterPro; IPR006210; IEGF.
DR InterPro; IPR002154; Neuregulin.
DR Pfam; PF00008; EGF; 1.
DR Pfam; PF02158; Neuregulin; 1.
DR PRINTS; PR01089; NEUREGULIN.
DR SMART; SM00181; EGF; 1.
DR PROSITE; PS00022; EGF_1; UNKNOWN_1.
DR PROSITE; PS00026; EGF_3; 1.
DR PROSITE; PS00589; PTS_HRP_SER; UNKNOWN_1.
KW EGF-like domain.
SQ SEQUENCE 700 AA; 76386 MW; 2F8111B17ECC49DA CRC64;

Query Match 29.9%; Score 251.5; DB 2; Length 700;
Best Local Similarity 34.0%; Pred. No. 4.5e-16;
Matches 52; Conservative 34; Mismatches 58; Indels 9; Gaps 4;

Qy 2 SSSATTTTPTSTSPKPHHTTSTSTERSEHPKCRDKDLAYCLNDGECFVETLTGSHKH 61
Db 206 SGTQPTTETNLQAPKLSTST-STGTSHLIKAEKEKTEFCVNGEGCFVTKDLSNPSRY 264

Qy 62 -CRCKEGYQGVRCDFLPKTDLSILSDP-NHLGIEFMESEVYQRVLSISCIIFGIVIVGM 120
Db 265 LCKCPNEFTGRCQNVY-----MASFYKHLGIEFMEAEELYQKRVLTITGICALLVVGVI 319

Qy 121 FCAAFYFKSKNITANSVSE 153
Db 320 MCVVAYCKTKQ--RQKLHDLRLQSLRSER 350

RESULT 4
Q6DR99 ID Q6DR99 PRELIMINARY; PRT; 700 AA.
AC Q6DR99;
DT 25-OCT-2004 (TrEMBLrel. 28, Created)
DT 25-OCT-2004 (TrEMBLrel. 28, Last sequence update)
```

```
DT 25-OCT-2004 (TrEMBLrel. 28, Last annotation update)
DE Neuregulin-1 type III beta1-a.
GN Name=Nrg1;
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=C57/BL6J;
RA Anton E.S., Ghoshghaei H.T., Weber J.L., McCann C., Fischer T.M.,
RA Cheung I.D., Gassmann M., Messing A., Klein R., Schwab M.H.,
RA Lloyd K.C., Lai C.;
RA Submitted (JUN-2004) to the EMBL/GenBank/DBJ databases.
CC -1- SIMILARITY: Contains 1 EGF-like domain.
DR EMBL; AY648975; AAT68240.1; -.
DR GO; GO:0005102; F:receptor binding; IEA.
DR GO; GO:0009790; P:embryonic development; IEA.
DR InterPro; IPR000742; EGF_2.
DR InterPro; IPR006209; EGF_like.
DR InterPro; IPR006210; IEGF.
DR InterPro; IPR002154; Neuregulin.
DR Pfam; PF00008; EGF; 1.
DR Pfam; PF02158; Neuregulin; 1.
DR PRINTS; PR01089; NEUREGULIN.
DR SMART; SM00181; EGF; 1.
DR PROSITE; PS00022; EGF_1; UNKNOWN_1.
DR PROSITE; PS00026; EGF_3; 1.
KW EGF-like domain.
SQ SEQUENCE 700 AA; 76504 MW; 37D7928FD7D49AC9 CRC64;

Query Match 29.6%; Score 249.5; DB 2; Length 700;
Best Local Similarity 36.6%; Pred. No. 7.1e-16;
Matches 48; Conservative 31; Mismatches 45; Indels 7; Gaps 3;

Qy 2 SSSATTTTPTSTSPKPHHTTSTSTERSEHPKCRDKDLAYCLNDGECFVETLTGSHKH 61
Db 205 SGTQPTTETNLQAPKLSTST-STGTSHLIKAEKEKTEFCVNGEGCFVTKDLSNPSRY 263

Qy 62 -CRCKEGYQGVRCDFLPKTDLSILSDP-NHLGIEFMESEVYQRVLSISCIIFGIVIVGM 120
Db 264 LCKCPNEFTGRCQNVY-----MASFYKHLGIEFMEAEELYQKRVLTITGICALLVVGVI 318

Qy 121 FCAAFYFKSKR 131
Db 319 MCVVAYCKTKK 329

RESULT 5
Q9ESAS ID Q9ESAS PRELIMINARY; PRT; 782 AA.
AC Q9ESAS;
DT 01-MAR-2001 (TrEMBLrel. 16, Created)
DT 01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
DT 01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE Glial growth factor beta 1a (Fragment).
GN Name=Nrg1;
OS Rattus norvegicus (Rat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
OX NCBI_TaxID=10116;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=Sprague-Dawley; TISSUE=Spinal cord/brain stem;
RA Carroll S.L., Stonecypher M.S., Anderson K.D., Pearson R.J. Jr.,
RA Frohnert P.W.;
RA Submitted (OCT-1999) to the EMBL/GenBank/DBJ databases.
CC -1- SIMILARITY: Contains 1 EGF-like domain.
DR EMBL; AF194993; AAG28433.1; -.
DR HSSP; Q12780; 1HRE.
DR GO; GO:0005102; F:receptor binding; IEA.
DR GO; GO:0009790; P:embryonic development; IEA.
DR InterPro; IPR000742; EGF_2.
```







```
Query Match      26.7%; Score 224.5; DB 1; Length 602;
Best Local Similarity 35.6%; Pred. No. 1.7e-13;
Matches 47; Conservative 27; Mismatches 43; Indels 15; Gaps 3;

Qy 1 SSSSATTTPETSTSPKFTTTTSTERSSEHFPCRDKDLAYCLNDGECFVIETLTGSHK 60
Db 116 TKASVIITDINATST-----STGTSHLTCKDIKQKAFVNGGECVWVDLPNPPR 166
Qy 61 H-CRCKEGYQGVRCDFLPKTDSTLSLDPNHLGIEFMSEEVYQKVLISCSIIIFGIVVG 119
Db 167 YLCRCPNFTGDRCONVY-----MASFYKHGIEFMEAEELYQKRVLTITGICIALLVVG 221
Qy 120 MFCAAFYFKSKR 131
Db 222 IMCVVAYCKTKK 233

RESULT 10
Q9ESA9
ID Q9ESA9 PRELIMINARY; PRT; 298 AA.
AC Q9ESA9;
DT 01-MAR-2001 (TrEMBLrel. 16, Created)
DT 01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
DE SMDF neuregulin alpha 2b (Fragment).
GN Name=Nrg1;
OS Rattus norvegicus (Rat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
OX NCBI_TaxID=10116;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=BDIX;
RA Carroll S.L., Anderson K.D., Frohnert P.W.;
RL Submitted (OCT-1999) to the EMBL/GenBank/DBJ databases.
CC -1- SIMILARITY: Contains 1 EGF-like domain.
DR EMBL; AF194440; AAC28429.1; -.
DR HSP; Q12780; IHRE.
DR GO; GO:0005102; F:receptor binding; IEA.
DR InterPro; IPR000742; EGF_2.
DR InterPro; IPR006209; EGF_like.
DR InterPro; IPR002114; HPR_Serp_S.
DR InterPro; IPR006210; IEGF.
DR Pfam; PF00008; EGF_1.
DR PRINTS; PR01089; NEUREGULIN.
DR SMART; SM00181; EGF_1.
DR PROSITE; PS00022; EGF_1; 1.
DR PROSITE; PS01186; EGF_2; 1.
DR PROSITE; PS50026; EGF_3; 1.
DR PROSITE; PS00589; PTS_HPR_SER; UNKNOWN_1.
KW EGF-like domain.
FT NON_TER 1
FT TER 298
SQ SEQUENCE 298 AA; 32851 MW; BD76F014C2B33026 CRC64;

Query Match      26.0%; Score 219; DB 2; Length 298;
Best Local Similarity 29.9%; Pred. No. 2.7e-13;
Matches 46; Conservative 37; Mismatches 55; Indels 16; Gaps 5;

Qy 2 SSSSATTTPETSTSPKFTTTTSTERSSEHFPCRDKDLAYCLNDGECFVIETLTGSHK 61
Db 20 SGTPQPTETNLQAPKLSST-STGTSHLIKAEKTEFCVNGGECFTVKDLSNPSRY 78
Qy 62 -CRCKEGYQGVRCDFLPKTDSTLSLDPNHLGIEFMSEEVYQKVLISCSIIIFGIVVG 119
Db 79 LCKQCPGFTGARTENVP-----MKVQTEKAEELYQKRVLTITGICIALLVVG 127
Qy 120 MFCAAFYFKSKRNTANSVSEERKGLPSQEPNL 153
Db 128 IMCVVAYCKTKQ--ROKLDRLRQLSRSESNL 159

RESULT 12
NRG2_MOUSE
ID NRG2_MOUSE STANDARD; PRT; 756 AA.
AC P56974;
DT 16-OCT-2001 (Rel. 40, Created)
DT 16-OCT-2001 (Rel. 40, Last sequence update)
DT 05-JUL-2004 (Rel. 44, Last annotation update)
DE Pro-neuregulin-2 precursor (Pro-NRG2) (Contains: Neuregulin-2 (NRG-2)
DE (Divergent of neuregulin 1) (DON-1)).
GN Name=Nrg2;
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=BDIX;
RA Carroll S.L., Anderson K.D., Frohnert P.W.;
RL Submitted (OCT-1999) to the EMBL/GenBank/DBJ databases.
CC -1- SIMILARITY: Contains 1 EGF-like domain.
DR EMBL; AF194439; AAC28428.1; -.
DR HSP; Q12780; IHRE.
DR GO; GO:0005102; F:receptor binding; IEA.
DR InterPro; IPR000742; EGF_2.
DR InterPro; IPR006209; EGF_like.
DR InterPro; IPR002114; HPR_Serp_S.
DR InterPro; IPR006210; IEGF.
DR Pfam; PF00008; EGF_1.
DR PRINTS; PR01089; NEUREGULIN.
DR SMART; SM00181; EGF_1.
DR PROSITE; PS00022; EGF_1; 1.
DR PROSITE; PS01186; EGF_2; 1.
DR PROSITE; PS50026; EGF_3; 1.
DR PROSITE; PS00589; PTS_HPR_SER; UNKNOWN_1.
KW EGF-like domain.
FT NON_TER 1
FT TER 298
SQ SEQUENCE 298 AA; 32851 MW; BD76F014C2B33026 CRC64;
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SEQUENCE FROM N.A. (ISOFORMS NRG2-5; NRG2-10 AND NRG2-16A).  
 RC STRAIN=C57BL/6; TISSUE=Brain;  
 RX MEDLINE=97311398; PubMed=9168115;  
 RA Caraway K.L. III, Weber J.L., Unger M.J., Ledesma J., Yu N.,  
 RA Gassmann M., Lai C.;  
 RT "Neuregulin-2, a new ligand of ErbB3/ErbB4-receptor tyrosine  
 RT kinases.";  
 RL Nature 387:512-516(1997).  
 RN [2]  
 RP SEQUENCE OF 150-756 FROM N.A. (ISOFORMS DON-1M AND DON-1S).  
 RC TISSUE=Choroid plexus;  
 RX MEDLINE=97342638; PubMed=9199335;  
 RA Busfield S.J., Michnick D.A., Chickering T.W., Revett T.L., Ma J.,  
 RA Woolf E.A., Conrath C.A., Dussault B.J., Woolf J., Goodearl A.D.J.,  
 RA Gearing D.P.;  
 RT "Characterization of a neuregulin-related gene, Don-1, that is highly  
 RT expressed in restricted regions of the cerebellum and hippocampus.";  
 RL Mol. Cell. Biol. 17:4007-4014(1997).  
 CC -!- FUNCTION: Direct ligand for ERBB3 and ERBB4 tyrosine kinase  
 CC receptors. Concomitantly recruits ERBB1 and ERBB2 coreceptors,  
 CC resulting in ligand-stimulated tyrosine phosphorylation and  
 CC activation of the ERBB receptors. May also promote the  
 CC heterodimerization with the EGF receptor.  
 CC -!- SUBCELLULAR LOCATION: Exists as an type I membrane protein and as  
 CC a proteolytically released soluble growth factor form. The  
 CC membrane-bound form does not seem to be active (By similarity).  
 CC -!- ALTERNATIVE PRODUCTS:  
 CC Event-Alternative splicing; Named isoforms=4;  
 CC Comment=Additional isoforms seem to exist;  
 CC Name=NRG2-16A;  
 CC IsoId=P56974-1; Sequence=Displayed;  
 CC Name=DON-1M;  
 CC IsoId=P56974-2; Sequence=VSP\_003464;  
 CC Name=DON-1S; Synonyms=NRG2-5;  
 CC IsoId=P56974-3; Sequence=VSP\_003462, VSP\_003463;  
 CC Name=NRG2-10;  
 CC IsoId=P56974-4; Sequence=VSP\_003460, VSP\_003461;  
 CC -!- TISSUE SPECIFICITY: Highest expression in the brain, with lower  
 CC levels in the lung. In the cerebellum, found in granule and  
 CC Purkinje cells.  
 CC -!- DOMAIN: The cytoplasmic domain may be involved in the regulation  
 CC of trafficking and proteolytic processing. Regulation of the  
 CC proteolytic processing involves initial intracellular domain  
 CC dimerization (By similarity).  
 CC -!- DOMAIN: ERBB receptor binding is elicited entirely by the EGF-like  
 CC domain (By similarity).  
 CC -!- PTM: Proteolytic cleavage close to the plasma membrane on the  
 CC external face leads to the release of the soluble growth factor  
 CC form (By similarity).  
 CC -!- PTM: Extensive glycosylation precedes the proteolytic cleavage (By  
 CC similarity).  
 CC -!- SIMILARITY: Belongs to the neuregulin family.  
 CC -!- SIMILARITY: Contains 1 EGF-like domain.  
 CC -!- SIMILARITY: Contains 1 immunoglobulin-like C2-type domain.  
 DR HSSP; Q42780; 1HRE.  
 DR MGD; MGI:1098246; Nrg2.  
 DR InterPro; IPR000742; EGF 2.  
 DR InterPro; IPR006209; EGF-like.  
 DR InterPro; IPR006210; IEGF.  
 DR InterPro; IPR007110; Ig-like.  
 DR InterPro; IPR003598; Ig\_c2.  
 DR Pfam; PF00008; EGF; 1.  
 DR Pfam; PF00047; ig; 1.  
 DR Pfam; PF02158; Neuregulin; 1.  
 DR SMART; SM00181; EGF; 1.  
 DR SMART; SM00408; IGC2; 1.  
 DR PROSITE; PS00022; EGF 1; 1.  
 DR PROSITE; PS01186; EGF 2; 1.  
 DR PROSITE; PS50026; EGF 3; 1.  
 DR PROSITE; PS50835; IG\_LIKE; 1.  
 KW Alternative splicing; EGF-like domain; Glycoprotein; Growth factor;  
 KW Immunoglobulin domain; Multigene family; Transmembrane.

FT PROPEP 1 19  
 FT CHAIN 20 756  
 FT CHAIN 20 314  
 FT CHAIN 20 315  
 FT DOMAIN 316 336  
 FT TRANSMEM 337 756  
 FT DOMAIN 145 240  
 FT DOMAIN 238 248  
 FT DOMAIN 249 290  
 FT DOMAIN 627 633  
 FT DISULFID 165 219  
 FT DISULFID 253 267  
 FT DISULFID 261 278  
 FT DISULFID 280 289  
 FT CARBOHYD 55 55  
 FT CARBOHYD 186 186  
 FT CARBOHYD 254 254  
 FT CARBOHYD 296 296  
 FT VARSPLIC 280 280  
 FT VARSPLIC 281 756  
 FT VARSPLIC 282 330  
 FT VARSPLIC 331 756  
 FT VARSPLIC 282 307  
 FT VARSPLIC 756 AA; 82213 MW; 51D85DC918BE678E CRC64;  
 SQ SEQUENCE 24.7%; Score 208; DB 1; Length 756;  
 Query Match 35.0%; Pred. No. 9.7e-12;  
 Best Local Similarity 26; Mismatches 40; Indels 10; Gaps 3;  
 Matches 41; Conservative 26;  
 QY 18 KFTHTTYSERSE--HFKPRDKDLAYCLNDEGCVFIETLTGSHKHCKEYQGVRC 74  
 Db 233 RLHVNVSVTLSWSGHARKCNETAKSYCVNGVCYIEGI--NQLSCKPVGYTGDRQC 290  
 QY 75 QFLPKTDSILSPNHLGIEFMSEEVYQVLSISCIIFGIVIVGMFCAAFYFKSR 131  
 Db 291 QP-----AMVNFSKHLGFELEAEELYQKRVLTITGICVALLVVGIVCVVAYCKTKK 342  
 RESULT 13  
 ID O35947 PRELIMINARY; PRT; 461 AA.  
 AC O35947;  
 DT 01-JAN-1998 (TrEMBLrel. 05, Created)  
 DT 01-JAN-1998 (TrEMBLrel. 05, Last sequence update)  
 DT 01-MAR-2004 (TrEMBLrel. 26, Last annotation update)  
 DE Neuregulin.  
 OS Mesocricetus auratus (Golden hamster).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Cricetinae;  
 OC Mesocricetus.  
 OX NCBI\_TaxID=10036;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RA Velasco J.A., FeiJoo E., Avila M.A., Notario V.;  
 RL Submitted (APR-1997) to the EMBL/GenBank/DBJ databases.  
 CC -!- SIMILARITY: Contains 1 EGF-like domain.  
 DR EMBL; U96612; AAB71812.1; --  
 DR HSSP; Q42780; 1HRE.  
 DR GO; GO:0005102; F:receptor binding; IEA.  
 DR GO; GO:0009790; P:embryonic development; IEA.  
 DR InterPro; IPR000742; EGF 2.  
 DR InterPro; IPR006209; EGF-like.  
 DR InterPro; IPR006210; IEGF.  
 DR InterPro; IPR007110; Ig-like.  
 DR InterPro; IPR003598; Ig\_c2.



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DR InterPro: IPR002154; Neuregulin.
DR Pfam: PF000047; EGF_1.
DR Pfam: PF02158; Neuregulin; 1.
DR PRINTS: PR01089; NEUREGULIN.
DR SMART: SM00408; IGC2; 1.
DR SMART: SM00408; IGC2; 1.
DR PROSITE: PS00022; EGF_1; 1.
DR PROSITE: PS01186; EGF_2; 1.
DR PROSITE: PS00026; EGF_3; 1.
DR PROSITE: PS50835; IG_LIKE; 1.
KW EGF-like domain.
SQ SEQUENCE 461 AA; 50890 MW; 935C9560F7148336 CRC64;

Query Match 24.1%; Score 203; DB 2; Length 461;
Best Local Similarity 28.5%; Pred. No. 1.7e-11;
Matches 43; Conservative 39; Mismatches 49; Indels 20; Gaps 5;

Qy 5 SATTTTETSTSPKFTHTTSTYSTERSEHPKPCRDKDLAYCLNDGCFVETLTGSHKH-CR 63
Db 157 SVSTEGANTSSS-----TSTTTGTSHLVKCAEKEKTCVNGGCFWVKDLSNPSRYLCK 211

Qy 64 CKEGYQGVRCDFLPKTDLSILSDPNHLGIEFME--SEEVYQVQLVLSISCIIFGIVIVGMFC 122
Db 212 CQPGFTGARTENVP-----MKVQEQEAELYQKRVLTITGICIALLVVGIMC 260

Qy 123 AAFYFKSKRNTANSVEERKWKGLPSQEPNL 153
Db 261 VWAYCKTKKQ--RQKLHDLRLQLSRERNNM 289

RESULT 14
Q6TGK9 Q6TGK9 PRELIMINARY; PRT; 394 AA.
AC Q6TGK9;
DT 05-JUL-2004 (TrEMBLrel. 27, Created)
DT 05-JUL-2004 (TrEMBLrel. 27, Last sequence update)
DE Neuregulin 1 alpha isoform (Fragment)
OS Oryctolagus cuniculus (Rabbit)
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
OX NCBI_TaxID=9986;
RN [1]
RP HENDRICKX J.;
RL Submitted (SEP-2003) to the EMBL/GenBank/DBJ databases.
CC -1- SIMILARITY: Contains 1 EGF-like domain.
DR EMBL: AY421758; AAR0250.1; -.
DR GO: GO:0005102; F:receptor binding; IEA.
DR GO: GO:0009790; P:embryonic development; IEA.
DR InterPro: IPR000742; EGF_2.
DR InterPro: IPR006209; EGF_Like.
DR InterPro: IPR005210; IEGF.
DR InterPro: IPR003599; IG.
DR InterPro: IPR007110; IG-like.
DR InterPro: IPR003598; IG_C2.
DR InterPro: IPR002154; Neuregulin.
DR Pfam: PF00008; EGF_1.
DR Pfam: PF00047; IG; 1.
DR Pfam: PF02158; Neuregulin; 1.
DR PRINTS: PR01089; NEUREGULIN.
DR SMART: SM00181; EGF; 1.
DR SMART: SM00409; IG; 1.
DR SMART: SM00408; IGC2; 1.
DR PROSITE: PS00022; EGF_1; 1.
DR PROSITE: PS01186; EGF_2; 1.
DR PROSITE: PS50026; EGF_3; 1.
DR PROSITE: PS50835; IG_LIKE; 1.
KW EGF-like domain.
FT NON_TER 1 1
SQ SEQUENCE 394 AA; 42980 MW; C183BE80927443F9 CRC64;

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Query Match 23.9%; Score 201; DB 2; Length 394;
Best Local Similarity 31.0%; Pred. No. 2.2e-11;
Matches 40; Conservative 34; Mismatches 37; Indels 18; Gaps 4;

Qy 5 SATTTTETSTSPKFTHTTSTYSTERSEHPKPCRDKDLAYCLNDGCFVETLTGSHKH-CR 63
Db 148 SVSTEGANTSSS-----TSTTTGTSHLVKCAEKEKTCVNGGCFWVKDLSNPSRYLCK 202

Qy 64 CKEGYQGVRCDFLPKTDLSILSDPNHLGIEFME--SEEVYQVQLVLSISCIIFGIVIVGMFC 122
Db 203 CQPGFTGARTENVP-----MKVQEQEAELYQKRVLTITGICIALLVVGIMC 251

Qy 123 AAFYFKSKR 131
Db 252 VWAYCKTKK 260

RESULT 15
Q7RTW1 Q7RTW1 PRELIMINARY; PRT; 462 AA.
AC Q7RTW1;
DT 01-MAR-2004 (TrEMBLrel. 26, Created)
DT 01-MAR-2004 (TrEMBLrel. 26, Last sequence update)
DT 01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE Neuregulin 1 isoform ndf43.
GN Name=NRG1;
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RX PubMed=12145742;
RA Stefansson H., Sigurdsson E., Steinthoroddottir V., Bjornadottir S.,
RA Sigurdsson T., Ghosh S., Brynjolfsson J., Gunnaradottir S.,
RA Ivarsson O., Chou T.T., Hjaltason O., Birgisdottir B., Jonsson H.,
RA Gudnadottir V.G., Gudmundsdottir E., Bjornsson A., Ingvarsson B.,
RA Ingason A., Sigfusson S., Hardardottir H., Harvey R.P., Brunner D.,
RA Mutel V., Gonzalo A., Lemke G., Sainz J., Johannesson G.,
RA Andresen T., Gudbjartsson D., Manolescu A., Frigge M.L., Gurney M.E.,
RA Kong A., Gulcher J.R., Petursson H., Stefansson K.;
RT "Neuregulin 1 and Susceptibility to Schizophrenia.";
RL Am. J. Hum. Genet. 71:0-0(2002).
CC -1- MISCELLANEOUS: The sequence shown here is derived from an
CC EMBL/GenBank/DBJ third party annotation (TPA) entry.
DR EMBL: BK000383; DAA00045.1; -.
DR HSP; Q12780; IHRF.
DR GO: GO:0005102; F:receptor binding; IEA.
DR GO: GO:0009790; P:embryonic development; IEA.
DR InterPro: IPR000742; EGF_2.
DR InterPro: IPR006209; EGF_Like.
DR InterPro: IPR007110; IG-Like.
DR InterPro: IPR002154; Neuregulin.
DR Pfam: PF00008; EGF; 1.
DR Pfam: PF00047; IG; 1.
DR Pfam: PF02158; Neuregulin; 1.
DR PRINTS: PR01089; NEUREGULIN.
DR PROSITE: PS00022; EGF_1; 1.
DR PROSITE: PS01186; EGF_2; 1.
DR PROSITE: PS50026; EGF_3; 1.
DR PROSITE: PS50835; IG_LIKE; 1.
DR PROSITE: PS50835; IG_LIKE; 1.
SQ SEQUENCE 462 AA; 50848 MW; 8CAADB30055A80D CRC64;

Query Match 23.9%; Score 201; DB 2; Length 462;
Best Local Similarity 31.0%; Pred. No. 2.7e-11;
Matches 40; Conservative 34; Mismatches 37; Indels 18; Gaps 4;

Qy 5 SATTTTETSTSPKFTHTTSTYSTERSEHPKPCRDKDLAYCLNDGCFVETLTGSHKH-CR 63
Db 157 SVSTEGANTSSS-----TSTTTGTSHLVKCAEKEKTCVNGGCFWVKDLSNPSRYLCK 211

Qy 64 CKEGYQGVRCDFLPKTDLSILSDPNHLGIEFME--SEEVYQVQLVLSISCIIFGIVIVGMFC 122

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Db 1 SSSSSATTTTPTSTSPKHTTTTSTSESHFKPCRDKDLAYCLNDGECFVIELTGSBK 60  
Qy 61 HCRCKEGYQGVRCDCQFLPKTDSILSDP-NHLGIEFMESEVYQVLSISCIIFGIVVG 120  
Db 61 HCRCKEGYQGVRCDCQFLPKTDSILSDP-NHLGIEFMESEVYQVLSISCIIFGIVVG 120  
Qy 121 FCAAFYFKSKRNITANSVSEERWKGLPQEPNLQDK 157  
Db 121 FCAAFYFKSKRNITANSVSEERWKGLPQEPNLQDK 157

RESULT 2  
US-08-899-437-23  
; Sequence 23, Application US/08899437  
; Patent No. 6121415  
; GENERAL INFORMATION:  
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao  
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related  
; LIGANDS AND USES THEREFOR  
; NUMBER OF SEQUENCES: 23  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: Genentech, Inc.  
; STREET: 1 DNA Way  
; CITY: South San Francisco  
; STATE: California  
; COUNTRY: USA  
; ZIP: 94080

COMPUTER READABLE FORM:  
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk  
COMPUTER: IBM PC compatible  
OPERATING SYSTEM: PC-DOS/MS-DOS  
SOFTWARE: WinPatIn (Genentech)  
CURRENT APPLICATION DATA:  
APPLICATION NUMBER: US/08/899,437  
FILING DATE: 24-Jul-1997  
CLASSIFICATION: 435  
ATTORNEY/AGENT INFORMATION:  
NAME: Conley, Deirdre L.  
REGISTRATION NUMBER: 36,487  
REFERENCE/DOCKET NUMBER: P1084R1  
TELEPHONE: 650/225-2066  
TELEFAX: 650/952-9881  
INFORMATION FOR SEQ ID NO: 23:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 696 amino acids  
TYPE: Amino Acid  
TOPOLOGY: Linear

FEATURE:  
NAME/KEY: Human NRG3B2  
LOCATION: 1-696  
IDENTIFICATION METHOD:  
OTHER INFORMATION:  
US-08-899-437-23  
Query Match 81.9%; Score 689.5; DB 3; Length 696;  
Best Local Similarity 92.3%; Pred. No. 8.3e-68;  
Matches 131; Conservative 4; Mismatches 4; Indels 3; Gaps 2;

Qy 1 SSSSSATTTTPTSTSPKHTTTTSTSESHFKPCRDKDLAYCLNDGECFVIELTGSBK 60  
Db 256 SSSSSATTTTPTSTSPKHTTTTSTSESHFKPCRDKDLAYCLNDGECFVIELTGSBK 315  
Qy 61 HCRCKEGYQGVRCDCQFLPKTDSILSDP-NHLGIEFMESEVYQVLSISCIIFGIVVG 119  
Db 316 HCRCKEGYQGVRCDCQFLPKTDSILSDP-NHLGIEFMESEVYQVLSISCIIFGIVVG 375  
Qy 120 MFCAPYFKSKRNITANSVSE 141  
Db 376 MFCAPYFKSKRNITANSVSE 395

RESULT 3  
US-09-126-121-23  
; Sequence 23, Application US/09126121  
; Patent No. 6252051  
; GENERAL INFORMATION:  
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao  
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related  
; LIGANDS AND USES THEREFOR  
; NUMBER OF SEQUENCES: 23  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: Genentech, Inc.  
; STREET: 1 DNA Way  
; CITY: South San Francisco  
; STATE: California  
; COUNTRY: USA  
; ZIP: 94080

COMPUTER READABLE FORM:  
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk  
COMPUTER: IBM PC compatible  
OPERATING SYSTEM: PC-DOS/MS-DOS  
SOFTWARE: WinPatIn (Genentech)  
CURRENT APPLICATION DATA:  
APPLICATION NUMBER: US/09/126,121  
FILING DATE: 30-Jul-1998  
CLASSIFICATION:  
ATTORNEY/AGENT INFORMATION:  
NAME: Conley, Deirdre L.  
REGISTRATION NUMBER: 36,487  
REFERENCE/DOCKET NUMBER: P1084R1D1  
TELEPHONE: 650/225-2066  
TELEFAX: 650/952-9881  
INFORMATION FOR SEQ ID NO: 23:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 696 amino acids  
TYPE: Amino Acid  
TOPOLOGY: Linear

FEATURE:  
NAME/KEY: Human NRG3B2  
LOCATION: 1-696  
IDENTIFICATION METHOD:  
OTHER INFORMATION:  
US-09-126-121-23  
Query Match 81.9%; Score 689.5; DB 3; Length 696;  
Best Local Similarity 92.3%; Pred. No. 8.3e-68;  
Matches 131; Conservative 4; Mismatches 4; Indels 3; Gaps 2;

Qy 1 SSSSSATTTTPTSTSPKHTTTTSTSESHFKPCRDKDLAYCLNDGECFVIELTGSBK 60  
Db 256 SSSSSATTTTPTSTSPKHTTTTSTSESHFKPCRDKDLAYCLNDGECFVIELTGSBK 315  
Qy 61 HCRCKEGYQGVRCDCQFLPKTDSILSDP-NHLGIEFMESEVYQVLSISCIIFGIVVG 119  
Db 316 HCRCKEGYQGVRCDCQFLPKTDSILSDP-NHLGIEFMESEVYQVLSISCIIFGIVVG 375  
Qy 120 MFCAPYFKSKRNITANSVSE 141  
Db 376 MFCAPYFKSKRNITANSVSE 395

RESULT 4  
US-08-899-437-6  
; Sequence 6, Application US/08899437  
; Patent No. 6121415  
; GENERAL INFORMATION:  
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao  
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related  
; LIGANDS AND USES THEREFOR  
; NUMBER OF SEQUENCES: 23  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: Genentech, Inc.  
; STREET: 1 DNA Way

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GenCore version 5.1.6  
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OM protein - protein search, using sw model

Run on: July 13, 2005, 20:19:22 ; Search time 42 Seconds  
(without alignments)  
279,045 Million cell updates/sec

Title: US-10-609-370-2  
Perfect score: 842  
Sequence: 1 SSSSSATTTTPTSTSPKFKH.....VSERWKGLPSQERNLOQDK 157

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 513545 seqs, 74649064 residues

Total number of hits satisfying chosen parameters: 513545

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

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4: /cgn2\_6/ptodata/1/iaa/6B\_COMB.pap.\*  
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

#### SUMMARIES

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1	842	100.0	157	4	US-09-097-681-2
2	689.5	81.9	696	3	US-08-899-437-23
3	689.5	81.9	720	3	US-08-899-437-6
4	689.5	81.9	720	3	US-08-899-437-6
5	689.5	81.9	720	3	US-08-899-437-6
6	686.5	81.5	720	4	US-09-097-681-22
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8	674.5	80.1	713	3	US-08-899-437-2
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10	552.5	65.6	360	3	US-08-899-437-7
11	539.5	64.1	362	3	US-08-899-437-3
12	539.5	64.1	362	3	US-08-899-437-3
13	282	33.5	48	4	US-08-553-769-6
14	277	32.9	47	3	US-08-899-437-4
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18	251.5	29.9	700	4	US-09-684-708A-2
19	246.5	29.3	1070	3	US-08-697-954-2
20	243	28.9	364	4	US-08-467-602-245
21	243	28.9	364	4	US-08-411-295F-171
22	243	28.9	398	4	US-08-467-602-287
23	243	28.9	398	4	US-08-411-295F-213
24	243	28.9	581	4	US-08-467-602-246
25	243	28.9	581	4	US-08-411-295F-172
26	243	28.9	613	3	US-08-470-335-230
27	243	28.9	613	4	US-08-467-602-329

28	243	28.9	613	4	US-08-411-295F-255	Sequence 255, App
29	243	28.9	615	4	US-08-467-602-288	Sequence 288, App
30	243	28.9	615	4	US-08-411-295F-214	Sequence 214, App
31	243	28.9	628	4	US-08-467-602-247	Sequence 247, App
32	243	28.9	628	4	US-08-411-295F-173	Sequence 173, App
33	243	28.9	647	4	US-08-467-602-371	Sequence 371, App
34	243	28.9	647	4	US-08-411-295F-297	Sequence 297, App
35	243	28.9	662	4	US-08-467-602-289	Sequence 289, App
36	243	28.9	662	4	US-08-411-295F-215	Sequence 215, App
37	243	28.9	830	3	US-08-470-335-231	Sequence 231, App
38	243	28.9	830	4	US-08-467-602-330	Sequence 330, App
39	243	28.9	830	4	US-08-411-295F-256	Sequence 256, App
40	243	28.9	864	4	US-08-467-602-372	Sequence 372, App
41	243	28.9	864	4	US-08-411-295F-298	Sequence 298, App
42	243	28.9	877	3	US-08-470-335-232	Sequence 232, App
43	243	28.9	877	4	US-08-467-602-331	Sequence 331, App
44	243	28.9	877	4	US-08-411-295F-257	Sequence 257, App
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#### ALIGNMENTS

RESULT 1  
US-09-037-681-2  
; Sequence 2, Application US/09097681  
; Patent No. 6727077  
; GENERAL INFORMATION:  
; APPLICANT: Young, Paul  
; APPLICANT: King, C. Richter  
; APPLICANT: Hijazi, Mai  
; APPLICANT: Ruben, Steve  
; TITLE OF INVENTION: Heregulin-Like Factor  
; NUMBER OF SEQUENCES: 22  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: Human Genome Sciences, Inc.  
; STREET: 9410 Key West Avenue  
; CITY: Rockville  
; STATE: MD  
; COUNTRY: US  
; ZIP: 20850  
; COMPUTER READABLE FORM:  
; MEDIUM TYPE: Floppy disk  
; COMPUTER: IBM PC compatible  
; OPERATING SYSTEM: PC-DOS/MS-DOS  
; SOFTWARE: Patent In Release #1.0, Version #1.30  
; CURRENT APPLICATION DATA:  
; APPLICATION NUMBER: US/09/097,681  
; FILING DATE:  
; CLASSIFICATION:  
; PRIOR APPLICATION DATA:  
; APPLICATION NUMBER: US 60/049,942  
; FILING DATE: 17-JUN-1997  
; ATTORNEY/AGENT INFORMATION:  
; NAME: Hoover, Kenley K.  
; REGISTRATION NUMBER: 40,302  
; REFERENCE/DOCKET NUMBER: PF83PCT  
; TELECOMMUNICATION INFORMATION:  
; TELEPHONE: 301-3098504  
; TELEFAX: 301-309-8439  
; INFORMATION FOR SEQ ID NO: 2:  
; SEQUENCE CHARACTERISTICS:  
; LENGTH: 157 amino acids  
; TYPE: amino acid  
; TOPOLOGY: linear  
; MOLECULE TYPE: protein  
; US-09-097-681-2

Query Match 100.0%; Score 842; DB 4; Length 157;  
Best Local Similarity 100.0%; Pred. No. 1.3e-85;  
Matches 157; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Db 61 HCRCKEGYQGVRCQDFLPKTDLSILSDPNHLGIEFMESEVYQVLSISCIIFGIVVGM 120  
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Db 121 FCAAFYFKSKRNITANSVSERKGLPSQEPNLQQDK 157  
RESULT 2  
US-08-899-437-23  
; Sequence 23, Application US/08899437  
; Patent No. 6121415  
; GENERAL INFORMATION:  
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao  
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related  
; TITLE OF INVENTION: Ligands and Uses Therefor  
; NUMBER OF SEQUENCES: 23  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: Genentech, Inc.  
; STREET: 1 DNA Way  
; CITY: South San Francisco  
; STATE: California  
; COUNTRY: USA  
; ZIP: 94080  
; COMPUTER READABLE FORM:  
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk  
; COMPUTER: IBM PC compatible  
; OPERATING SYSTEM: PC-DOS/MS-DOS  
; SOFTWARE: WinPatIn (Genentech)  
; CURRENT APPLICATION DATA:  
; APPLICATION NUMBER: US/08/899,437  
; FILING DATE: 24-Jul-1997  
; CLASSIFICATION: 435  
; ATTORNEY/AGENT INFORMATION:  
; NAME: Conley, Deirdre L.  
; REGISTRATION NUMBER: 36,487  
; REFERENCE/DOCKET NUMBER: P1084R1  
; TELECOMMUNICATION INFORMATION:  
; TELEPHONE: 650/952-9881  
; TELEFAX: 650/225-2066  
; INFORMATION FOR SEQ ID NO: 23:  
; SEQUENCE CHARACTERISTICS:  
; LENGTH: 696 amino acids  
; TYPE: Amino Acid  
; TOPOLOGY: Linear  
; FEATURE:  
; NAME/KEY: Human NRG3B2  
; LOCATION: 1-696  
; IDENTIFICATION METHOD:  
; OTHER INFORMATION:  
; US-08-899-437-23  
Query Match 81.9%; Score 689.5; DB 3; Length 696;  
Best Local Similarity 92.3%; Pred. No. 8.3e-68;  
Matches 131; Conservative 4; Mismatches 4; Indels 3; Gaps 2;  
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Db 256 SSSSSATTTTPTSTSPKFTTSTYSTERSEHFPCRDKDLAYCLNDGECFVIETLTGSHK 315  
QY 61 HCRCKEGYQGVRCQDFLPKTDLSILSDPNHLGIEFMESEVYQVLSISCIIFGIVVGM 119  
Db 316 HCRCKEGYQGVRCQDFLPKTDLSILSDPNHLGIEFMESEVYQVLSISCIIFGIVVGM 375  
QY 120 MFCAAFYFKSKRNITANSVSSEE 141  
Db 376 MFCAAFYFKSKKQ--AKQIQEQ 395  
US-08-899-437-23  
Query Match 81.9%; Score 689.5; DB 3; Length 696;  
Best Local Similarity 92.3%; Pred. No. 8.3e-68;  
Matches 131; Conservative 4; Mismatches 4; Indels 3; Gaps 2;  
QY 1 SSSSSATTTTPTSTSPKFTTSTYSTERSEHFPCRDKDLAYCLNDGECFVIETLTGSHK 60  
Db 256 SSSSSATTTTPTSTSPKFTTSTYSTERSEHFPCRDKDLAYCLNDGECFVIETLTGSHK 315  
QY 61 HCRCKEGYQGVRCQDFLPKTDLSILSDPNHLGIEFMESEVYQVLSISCIIFGIVVGM 119  
Db 316 HCRCKEGYQGVRCQDFLPKTDLSILSDPNHLGIEFMESEVYQVLSISCIIFGIVVGM 375  
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Db 376 MFCAAFYFKSKKQ--AKQIQEQ 395

RESULT 3  
US-09-126-121-23  
; Sequence 23, Application US/09126121  
; Patent No. 6252051  
; GENERAL INFORMATION:  
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao  
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related  
; TITLE OF INVENTION: Ligands and Uses Therefor  
; NUMBER OF SEQUENCES: 23  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: Genentech, Inc.  
; STREET: 1 DNA Way  
; CITY: South San Francisco  
; STATE: California  
; COUNTRY: USA  
; ZIP: 94080  
; COMPUTER READABLE FORM:  
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk  
; COMPUTER: IBM PC compatible  
; OPERATING SYSTEM: PC-DOS/MS-DOS  
; SOFTWARE: WinPatIn (Genentech)  
; CURRENT APPLICATION DATA:  
; APPLICATION NUMBER: US/09/126,121  
; FILING DATE: 30-Jul-1998  
; CLASSIFICATION:  
; ATTORNEY/AGENT INFORMATION:  
; NAME: Conley, Deirdre L.  
; REGISTRATION NUMBER: 36,487  
; REFERENCE/DOCKET NUMBER: P1084R1D1  
; TELECOMMUNICATION INFORMATION:  
; TELEPHONE: 650/952-9881  
; TELEFAX: 650/225-2066  
; INFORMATION FOR SEQ ID NO: 23:  
; SEQUENCE CHARACTERISTICS:  
; LENGTH: 696 amino acids  
; TYPE: Amino Acid  
; TOPOLOGY: Linear  
; FEATURE:  
; NAME/KEY: Human NRG3B2  
; LOCATION: 1-696  
; IDENTIFICATION METHOD:  
; OTHER INFORMATION:  
; US-09-126-121-23  
Query Match 81.9%; Score 689.5; DB 3; Length 696;  
Best Local Similarity 92.3%; Pred. No. 8.3e-68;  
Matches 131; Conservative 4; Mismatches 4; Indels 3; Gaps 2;  
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QY 61 HCRCKEGYQGVRCQDFLPKTDLSILSDPNHLGIEFMESEVYQVLSISCIIFGIVVGM 119  
Db 316 HCRCKEGYQGVRCQDFLPKTDLSILSDPNHLGIEFMESEVYQVLSISCIIFGIVVGM 375  
QY 120 MFCAAFYFKSKRNITANSVSSEE 141  
Db 376 MFCAAFYFKSKKQ--AKQIQEQ 395  
US-09-126-121-23  
RESULT 4  
US-08-899-437-6  
; Sequence 6, Application US/08899437  
; Patent No. 6121415  
; GENERAL INFORMATION:  
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao  
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related  
; TITLE OF INVENTION: Ligands and Uses Therefor  
; NUMBER OF SEQUENCES: 23  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: Genentech, Inc.  
; STREET: 1 DNA Way

;; CITY: South San Francisco  
;; STATE: California  
;; COUNTRY: USA  
;; ZIP: 94080  
;;  
;; COMPUTER READABLE FORM:  
;; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk  
;; COMPUTER: IBM PC compatible  
;; OPERATING SYSTEM: PC-DOS/MS-DOS  
;; SOFTWARE: WinPatIn (Genentech)  
;; CURRENT APPLICATION DATA:  
;; APPLICATION NUMBER: US/08/899,437  
;; FILING DATE: 24-Jul-1997  
;;  
;; CLASSIFICATION: 435  
;; ATTORNEY/AGENT INFORMATION:  
;; NAME: Conley, Deirdre L.  
;; REGISTRATION NUMBER: 36,487  
;; REFERENCE/DOCKET NUMBER: P1084R1  
;; TELECOMMUNICATION INFORMATION:  
;; TELEPHONE: 650/225-2066  
;; TELEFAX: 650/952-9881  
;; INFORMATION FOR SEQ ID NO: 6:  
;; SEQUENCE CHARACTERISTICS:  
;; LENGTH: 720 amino acids  
;; TYPE: Amino Acid  
;; TOPOLOGY: Linear  
;;  
;; NAME/KEY: hNRG3B1 amino acid sequence  
;; LOCATION: 1-720  
;; IDENTIFICATION METHOD:  
;; OTHER INFORMATION:  
;;  
US-08-899-437-6

Query Match 81.9%; Score 689.5; DB 3; Length 720;  
Best Local Similarity 92.3%; Pred. No. 8.7e-68;  
Matches 131; Conservative 4; Mismatches 4; Indels 3; Gaps 2;

Qy 1 SSSSSATTTTPTSTSPKFTHTTSTSEHFPCRDKDLAYCLNDGECFVIETLTGSHK 60  
Db 256 SSSSSATTTTPTSTSPKFTHTTSTSEHFPCRDKDLAYCLNDGECFVIETLTGSHK 315

Qy 61 HCRCKEGYQGVRCQDFLPKTDLSILSDP-NHLGIEFMESEEVYQROVLISCIIFGIVVG 119  
Db 316 HCRCKEGYQGVRCQDFLPKTDLSILSDPDTDLGLIEFMESEEVYQROVLISCIIFGIVVG 375

Qy 120 MFCAAFYFKSKRNTANSVSEE 141  
Db 376 MFCAAFYFKSKKQ--AKQIQEQ 395

RESULT 5  
US-09-126-121-6  
; Sequence 6, Application US/09126121  
; Patent No. 6252051  
; GENERAL INFORMATION:  
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao  
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related  
; TITLE OF INVENTION: Ligands and Uses Therefor  
; NUMBER OF SEQUENCES: 23  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: Genentech, Inc.  
; STREET: 1 DNA Way  
; CITY: South San Francisco  
; STATE: California  
; COUNTRY: USA  
; ZIP: 94080  
; COMPUTER READABLE FORM:  
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk  
; COMPUTER: IBM PC compatible  
; OPERATING SYSTEM: PC-DOS/MS-DOS  
; SOFTWARE: WinPatIn (Genentech)  
; CURRENT APPLICATION DATA:  
; APPLICATION NUMBER: US/09/126,121  
; FILING DATE: 30-Jul-1998

;; CITY: South San Francisco  
;; STATE: California  
;; COUNTRY: USA  
;; ZIP: 94080  
;;  
;; COMPUTER READABLE FORM:  
;; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk  
;; COMPUTER: IBM PC compatible  
;; OPERATING SYSTEM: PC-DOS/MS-DOS  
;; SOFTWARE: WinPatIn (Genentech)  
;; CURRENT APPLICATION DATA:  
;; APPLICATION NUMBER: US/09/126,121  
;; FILING DATE: 30-Jul-1998

;; CLASSIFICATION:  
;; ATTORNEY/AGENT INFORMATION:  
;; NAME: Conley, Deirdre L.  
;; REGISTRATION NUMBER: 36,487  
;; REFERENCE/DOCKET NUMBER: P1084R1D1  
;; TELECOMMUNICATION INFORMATION:  
;; TELEPHONE: 650/225-2066  
;; TELEFAX: 650/952-9881  
;; INFORMATION FOR SEQ ID NO: 6:  
;; SEQUENCE CHARACTERISTICS:  
;; LENGTH: 720 amino acids  
;; TYPE: Amino Acid  
;; TOPOLOGY: Linear  
;;  
;; NAME/KEY: hNRG3B1 amino acid sequence  
;; LOCATION: 1-720  
;; IDENTIFICATION METHOD:  
;; OTHER INFORMATION:  
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US-09-126-121-6

Query Match 81.9%; Score 689.5; DB 3; Length 720;  
Best Local Similarity 92.3%; Pred. No. 8.7e-68;  
Matches 131; Conservative 4; Mismatches 4; Indels 3; Gaps 2;

Qy 1 SSSSSATTTTPTSTSPKFTHTTSTSEHFPCRDKDLAYCLNDGECFVIETLTGSHK 60  
Db 256 SSSSSATTTTPTSTSPKFTHTTSTSEHFPCRDKDLAYCLNDGECFVIETLTGSHK 315

Qy 61 HCRCKEGYQGVRCQDFLPKTDLSILSDP-NHLGIEFMESEEVYQROVLISCIIFGIVVG 119  
Db 316 HCRCKEGYQGVRCQDFLPKTDLSILSDPDTDLGLIEFMESEEVYQROVLISCIIFGIVVG 375

Qy 120 MFCAAFYFKSKRNTANSVSEE 141  
Db 376 MFCAAFYFKSKKQ--AKQIQEQ 395

RESULT 6  
US-09-037-681-22  
; Sequence 22, Application US/09097681  
; Patent No. 6727077  
; GENERAL INFORMATION:  
; APPLICANT: Young, Paul  
; APPLICANT: King, C. Richter  
; APPLICANT: Hijazi, Mai  
; APPLICANT: Ruben, Steve  
; TITLE OF INVENTION: Heregulin-Like Factor  
; NUMBER OF SEQUENCES: 22  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: Human Genome Sciences, Inc.  
; STREET: 9410 Key West Avenue  
; CITY: Rockville  
; STATE: MD  
; COUNTRY: US  
; ZIP: 20850  
; COMPUTER READABLE FORM:  
; MEDIUM TYPE: Floppy disk  
; COMPUTER: IBM PC compatible  
; OPERATING SYSTEM: PC-DOS/MS-DOS  
; SOFTWARE: PatentIn Release #1.0, Version #1.30  
; CURRENT APPLICATION DATA:  
; APPLICATION NUMBER: US/09/097,681  
; FILING DATE:  
; CLASSIFICATION:  
; PRIOR APPLICATION DATA:  
; APPLICATION NUMBER: US 60/049,942  
; FILING DATE: 17-JUN-1997  
; ATTORNEY/AGENT INFORMATION:  
; NAME: Hoover, Kenley K.  
; REGISTRATION NUMBER: 40,302  
; REFERENCE/DOCKET NUMBER: PF383PCT  
; TELECOMMUNICATION INFORMATION:  
; TELEPHONE: 301-3098504

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/ TELEFAX: 301-309-8439
/ INFORMATION FOR SEQ ID NO: 22:
/ SEQUENCE CHARACTERISTICS:
/ LENGTH: 720 amino acids
/ TYPE: amino acid
/ STRANDEDNESS: single
/ TOPOLOGY: linear
/ MOLECULE TYPE: protein
/ US-09-097-681-22

Query Match 81.5%; Score 686.5; DB 4; Length 720;
Best Local Similarity 91.5%; Pred. No. 1.9e-67;
Matches 130; Conservative 5; Mismatches 4; Indels 3; Gaps 2;

QY 1 SSSSSATTTPTSTSPKFTHTTSTSRSHFKCRDKLAYCLNDGECFVIETLTGSHK 60
DB 256 SSSSSSTTTTPTSTSPKFTHTTSTSRSEHFKPCRDKLAYCLNDGECFVIETLTGSHK 315
QY 61 HCRCKEGVGVRCDQFLPKTDSILSDP-NHLGIEFMSEEEVYQRQLVSISCIIFGIVVG 119
DB 316 HCRCKEGVGVRCDQFLPKTDSILSDP-DHDLGIEFMSEEEVYQRQLVSISCIIFGIVVG 375
QY 120 MFCAAFYFKSRNITANSVSEE 141
DB 376 MFCAAFYFKSKQ--AKQIQEQ 395

RESULT 7
US-08-899-437-2
Sequence 2, Application US/08899437
Patent No. 6121415
GENERAL INFORMATION:
APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
TITLE OF INVENTION: Ligands and Uses Therefor
NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESS:
ADDRESSEE: Genentech, Inc.
STREET: 1 DNA Way
CITY: South San Francisco
STATE: California
COUNTRY: USA
ZIP: 94080
COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WinPatin (Genentech)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/899,437
FILING DATE: 24-Jul-1997
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Conley, Deirdre L.
REGISTRATION NUMBER: 36,487
REFERENCE/DOCKET NUMBER: P1084R1
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650/225-2066
TELEFAX: 650/952-9881
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 713 amino acids
TYPE: Amino Acid
TOPOLOGY: Linear
FEATURE:
NAME/KEY: Mouse NRG3 (mNRG3)/amino acid seq.
LOCATION: 1-713
IDENTIFICATION METHOD:
OTHER INFORMATION:
US-08-899-437-2

Query Match 80.1%; Score 674.5; DB 3; Length 713;
Best Local Similarity 90.7%; Pred. No. 4e-66;

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Db 379 PCAAPYFKSKQ--AKQIQE 396

RESULT 9

US-08-899-437-7

Sequence 7, Application US/08899437

Patent No. 6121415

GENERAL INFORMATION:

APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao

TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related

TITLE OF INVENTION: Ligands and Uses Therefor

NUMBER OF SEQUENCES: 23

CORRESPONDENCE ADDRESS:

ADDRESSEE: Genentech, Inc.

STREET: 1 DNA Way

CITY: South San Francisco

STATE: California

COUNTRY: USA

ZIP: 94080

COMPUTER READABLE FORM:

MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: WinPatIn (Genentech)

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/899,437

FILING DATE: 24-Jul-1997

CLASSIFICATION: 435

ATTORNEY/AGENT INFORMATION:

NAME: Conley, Deirdre L.

REGISTRATION NUMBER: 36,487

REFERENCE/DOCKET NUMBER: P1084R1

TELECOMMUNICATION INFORMATION:

TELEPHONE: 650/225-2066

TELEFAX: 650/952-9881

INFORMATION FOR SEQ ID NO: 7:

FILING DATE: 24-Jul-1997

CLASSIFICATION: 435

ATTORNEY/AGENT INFORMATION:

NAME: Conley, Deirdre L.

REGISTRATION NUMBER: 36,487

REFERENCE/DOCKET NUMBER: P1084R1

TELECOMMUNICATION INFORMATION:

TELEPHONE: 650/225-2066

TELEFAX: 650/952-9881

INFORMATION FOR SEQ ID NO: 7:

SEQUENCE CHARACTERISTICS:

LENGTH: 360 amino acids

TYPE: Amino Acid

TOPOLOGY: Linear

FEATURE:

NAME/KEY: hNRG3 extracellular domain/Amino AcidSeq

LOCATION: 1-360

IDENTIFICATION METHOD:

OTHER INFORMATION:

US-08-899-437-7

Query Match 65.6%; Score 552.5; DB 3; Length 360;

Best Local Similarity 98.1%; Pred. No. 5.5e-53;

Matches 103; Conservative 1; Mismatches 0; Indels 1; Gaps 1;

Qy 1 SSSSSATTTTPTSTSPKFTTSTYSTERSEHFPCRDKDLAYCLNDGSCFVIETLTGSHK 60

Db 256 SSSSSATTTTPTSTSPKFTTSTYSTERSEHFPCRDKDLAYCLNDGSCFVIETLTGSHK 315

Qy 61 HCRCKEGVQGVRCDFLPKTDLSLSDP-NHLGIEFMESEVYQK 104

Db 316 HCRCKEGVQGVRCDFLPKTDLSLSDP-NHLGIEFMESEVYQK 360

RESULT 10

US-09-126-121-7

Sequence 7, Application US/09126121

Patent No. 6252051

GENERAL INFORMATION:

APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao

TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related

TITLE OF INVENTION: Ligands and Uses Therefor

NUMBER OF SEQUENCES: 23

CORRESPONDENCE ADDRESS:

ADDRESSEE: Genentech, Inc.

STREET: 1 DNA Way

CITY: South San Francisco

STATE: California

COUNTRY: USA

ZIP: 94080

COMPUTER READABLE FORM:

MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: WinPatIn (Genentech)

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/899,437

FILING DATE: 24-Jul-1997

CLASSIFICATION: 435

ATTORNEY/AGENT INFORMATION:

NAME: Conley, Deirdre L.

REGISTRATION NUMBER: 36,487

REFERENCE/DOCKET NUMBER: P1084R1

TELECOMMUNICATION INFORMATION:

TELEPHONE: 650/225-2066

TELEFAX: 650/952-9881

INFORMATION FOR SEQ ID NO: 7:

SEQUENCE CHARACTERISTICS:

LENGTH: 360 amino acids

TYPE: Amino Acid

TOPOLOGY: Linear

FEATURE:

NAME/KEY: hNRG3 extracellular domain/Amino AcidSeq

LOCATION: 1-360

IDENTIFICATION METHOD:

OTHER INFORMATION:

US-08-899-437-7

Query Match 65.6%; Score 552.5; DB 3; Length 360;

Best Local Similarity 98.1%; Pred. No. 5.5e-53;

Matches 103; Conservative 1; Mismatches 0; Indels 1; Gaps 1;

Qy 1 SSSSSATTTTPTSTSPKFTTSTYSTERSEHFPCRDKDLAYCLNDGSCFVIETLTGSHK 60

Db 256 SSSSSATTTTPTSTSPKFTTSTYSTERSEHFPCRDKDLAYCLNDGSCFVIETLTGSHK 315

Qy 61 HCRCKEGVQGVRCDFLPKTDLSLSDP-NHLGIEFMESEVYQK 104

Db 316 HCRCKEGVQGVRCDFLPKTDLSLSDP-NHLGIEFMESEVYQK 360

RESULT 11

US-08-899-437-3

Sequence 3, Application US/08899437

Patent No. 6121415

GENERAL INFORMATION:

APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao

TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related

TITLE OF INVENTION: Ligands and Uses Therefor

NUMBER OF SEQUENCES: 23

CORRESPONDENCE ADDRESS:

ADDRESSEE: Genentech, Inc.

STREET: 1 DNA Way

CITY: South San Francisco

STATE: California

COUNTRY: USA

ZIP: 94080

COMPUTER READABLE FORM:

MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: WinPatIn (Genentech)

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/899,437

FILING DATE: 24-Jul-1997

CLASSIFICATION: 435

ATTORNEY/AGENT INFORMATION:

NAME: Conley, Deirdre L.

REGISTRATION NUMBER: 36,487

REFERENCE/DOCKET NUMBER: P1084R1

Thu Jul 14 08:07:48 2005

TELECOMMUNICATION INFORMATION:  
TELEPHONE: 650/225-2066  
TELEFAX: 650/952-9881  
INFORMATION FOR SEQ ID NO: 3:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 362 amino acids  
TYPE: Amino Acid  
TOPOLOGY: Linear  
FEATURE:  
NAME/KEY: mNRG3 extracellular domainAmino acid seq  
LOCATION: 1-362  
IDENTIFICATION METHOD:  
OTHER INFORMATION:  
US-08-899-437-3

Query Match 64.1%; Score 539.5; DB 3; Length 362;  
Best Local Similarity 95.2%; Pred. No. 1.5e-51;  
Matches 99; Conservative 4; Mismatches 0; Indels 1; Gaps 1;  
QY 2 SSSAATTTTPTSTSPKPHHTTSTSESEHFKPCRDKDLAYCLNDGECFVIETLTGSHKH 61  
DB 259 SSTSTTTTPTSTSPKPHHTTSTSESEHFKPCRDKDLAYCLNDGECFVIETLTGSHKH 318  
QY 62 CRCKEGYQGVRCDOFLPKTDSILSDP-NHLGIEFMSESEVYQ 104  
DB 319 CRCKEGYQGVRCDOFLPKTDSILSDP-TDHLGIEFMSESEVYQ 362

RESULT 12  
US-09-126-121-3  
Sequence 3, Application US/09126121  
Patent No. 6252051  
GENERAL INFORMATION:  
APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao  
TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related  
TITLE OF INVENTION: Ligands and Uses Therefor  
NUMBER OF SEQUENCES: 23  
CORRESPONDENCE ADDRESS:  
ADDRESSEE: Genentech, Inc.  
STREET: 1 DNA Way  
CITY: South San Francisco  
STATE: California  
COUNTRY: USA  
ZIP: 94080  
COMPUTER READABLE FORM:  
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk  
COMPUTER: IBM PC compatible  
OPERATING SYSTEM: PC-DOS/MS-DOS  
SOFTWARE: WinPatIn (Genentech)  
CURRENT APPLICATION DATA:  
APPLICATION NUMBER: US/09/126.121  
FILING DATE: 30-Jul-1998  
CLASSIFICATION:  
ATTORNEY/AGENT INFORMATION:  
NAME: Conley, Deirdre L.  
REGISTRATION NUMBER: 36,487  
REFERENCE/DOCKET NUMBER: P1084R1D1  
TELECOMMUNICATION INFORMATION:  
TELEPHONE: 650/225-2066  
TELEFAX: 650/952-9881  
INFORMATION FOR SEQ ID NO: 3:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 362 amino acids  
TYPE: Amino Acid  
TOPOLOGY: Linear  
FEATURE:  
NAME/KEY: mNRG3 extracellular domainAmino acid seq  
LOCATION: 1-362  
IDENTIFICATION METHOD:  
OTHER INFORMATION:  
US-09-126-121-3

Query Match 64.1%; Score 539.5; DB 3; Length 362;

Best Local Similarity 95.2%; Pred. No. 1.5e-51;  
Matches 99; Conservative 4; Mismatches 0; Indels 1; Gaps 1;  
QY 2 SSSAATTTTPTSTSPKPHHTTSTSESEHFKPCRDKDLAYCLNDGECFVIETLTGSHKH 61  
DB 259 SSTSTTTTPTSTSPKPHHTTSTSESEHFKPCRDKDLAYCLNDGECFVIETLTGSHKH 318  
QY 62 CRCKEGYQGVRCDOFLPKTDSILSDP-NHLGIEFMSESEVYQ 104  
DB 319 CRCKEGYQGVRCDOFLPKTDSILSDP-TDHLGIEFMSESEVYQ 362

RESULT 13  
US-09-553-769-6  
Sequence 6, Application US/09553769  
Patent No. 6544759  
GENERAL INFORMATION:  
APPLICANT: Harari, Daniel  
APPLICANT: Yarden, Yosef  
TITLE OF INVENTION: NOVEL GROWTH FACTOR WHICH ACTS THROUGH ErbB-4 RECEPTOR TYROSINE KINASE  
TITLE OF INVENTION: SEQUENCES ENCODING SAME AND USES THEREOF  
FILE REFERENCE: 00/20522  
CURRENT APPLICATION NUMBER: US/09/553,769  
CURRENT FILING DATE: 2000-04-21  
NUMBER OF SEQ ID NOS: 18  
SOFTWARE: PatentIn version 3.0  
SEQ ID NO 6  
LENGTH: 48  
TYPE: PRT  
ORGANISM: Mus musculus  
US-09-553-769-6

Query Match 33.5%; Score 282; DB 4; Length 48;  
Best Local Similarity 100.0%; Pred. No. 3.9e-24;  
Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
QY 30 EHFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 77  
DB 1 EHFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 48

RESULT 14  
US-08-899-437-4  
Sequence 4, Application US/08899437  
Patent No. 6121415  
GENERAL INFORMATION:  
APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao  
TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related  
TITLE OF INVENTION: Ligands and Uses Therefor  
NUMBER OF SEQUENCES: 23  
CORRESPONDENCE ADDRESS:  
ADDRESSEE: Genentech, Inc.  
STREET: 1 DNA Way  
CITY: South San Francisco  
STATE: California  
COUNTRY: USA  
ZIP: 94080  
COMPUTER READABLE FORM:  
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk  
COMPUTER: IBM PC compatible  
OPERATING SYSTEM: PC-DOS/MS-DOS  
SOFTWARE: WinPatIn (Genentech)  
CURRENT APPLICATION DATA:  
APPLICATION NUMBER: US/08/899,437  
FILING DATE: 24-Jul-1997  
CLASSIFICATION: 435  
ATTORNEY/AGENT INFORMATION:  
NAME: Conley, Deirdre L.  
REGISTRATION NUMBER: 36,487  
REFERENCE/DOCKET NUMBER: P1084R1  
TELECOMMUNICATION INFORMATION:  
TELEPHONE: 650/225-2066  
TELEFAX: 650/952-9881

Search completed: July 13, 2005, 20:29:26  
Job time : 43 secs

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; INFORMATION FOR SEQ ID NO: 4:
; SEQUENCE CHARACTERISTICS:
;   LENGTH: 47 amino acids
;   TYPE: Amino Acid
;   TOPOLOGY: Linear
; FEATURE:
;   NAME/KEY: NRG3 EGF-like domain/amino acid seq.
;   LOCATION: 1-47
; IDENTIFICATION METHOD:
; OTHER INFORMATION:
;
US-08-899-437-4

Query Match      32.9%; Score 277; DB 3; Length 47;
Best Local Similarity 100.0%; Pred. No. 1.3e-23;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 31 HFKECRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 77
Db 1 HFKECRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 47

RESULT 15
US-08-899-437-8
; Sequence 8, Application US/08899437
; Patent No. 6121415
; GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
; TITLE OF INVENTION: Ligands and Uses Therefor
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: WinPatIn (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/899,437
; FILING DATE: 24-Jul-1997
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Conley, Deirdre L.
; REGISTRATION NUMBER: 36,487
; REFERENCE/DOCKET NUMBER: P1084R1
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650/225-2066
; TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 8:
; SEQUENCE CHARACTERISTICS:
;   LENGTH: 47 amino acids
;   TYPE: Amino Acid
;   TOPOLOGY: Linear
; FEATURE:
;   NAME/KEY: NRG3 EGF-like domain/amino acid seq.
;   LOCATION: 1-47
; IDENTIFICATION METHOD:
; OTHER INFORMATION:
;
US-08-899-437-8

Query Match      32.9%; Score 277; DB 3; Length 47;
Best Local Similarity 100.0%; Pred. No. 1.3e-23;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 31 HFKECRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 77
Db 1 HFKECRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 47
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